IRON AGE
Semi-Annual Index

January-June 1961 • **Volume 187**

Microfilm Copies

Complete microfilm copies of The IRON AGE, text and advertising, are available beginning with Vol. 161 (1948) through the issues covered in this index. For information write to University Microfilms, 313 N. First St., Ann Arbor, Mich.

The IRON AGE

SEMI-ANNUAL INDEX

January-June 1961 Volume 187

CLASSIFIED INDEX

A

Abrasives

Grinding Wheels Get Quick Mix, Feb 23 p 102
New Alumina Shapes Hard Steel, Washes Molds, Improves Paint, May 18 p 144

Adhesives

Adhesive Bonding of Metals: What Are Design Factors? June 15 p 110
Adhesive Education Needed, Feb 9 p 150
Automakers Preview the Future, by A. E. Fleming, Jan 19 p 50

See also Bonding

Aerojet General Corp.:

How Explosives Weld Metals, May 4 p 83
Tape-Controlled Mill Checked Quickly With New Recorder, Apr 27 p 112

Aerospace

Aerospace Hunts New Metals, by R. R. Kay Apr 27 p 91
Aerospace Spotlighted at Show, by R. R. Kay, Mar 30 p 93
Big Squeeze Is Put on Metals Research, by K. W. Bennett, June 29 p 38
Burrs Spur Finishing Progress, by R. H. Eshelman, Apr 13 p 77
Can Hot Machining Techniques Keep Pace With New Alloys? Mar 2 p 98
Dynamic Honing Rids Trouble in Hydraulic Fluid Lines, by C. A. Balman, May 25 p 108
Electronics Moves to the Top, by R. R. Kay, Apr 6 p 89
Electrospark Forming: New Way to Shape Hard-to-Form Metals, Feb 23 p 98
Fresh Approach in Machining Takes Aim on Hard Steels, by R. H. Eshelman, Apr 27 p 101
How Aircraft Makers Diversify, by R. R. Kay, Jan 19 p 63
How Radomes and Nose Cones Are Handled With Care, May 25 p 111
How Space-Age Energy Sources Spark Rise of New Materials, by R. M. Treco, Mar 2 p 87
Industrial Horizon Widens for the Newer Plastics, Feb 23 p 93
Materials for the Future, by C. L. Kobrin, June 22 p 115
Metcut Provides Machining Data, by R. H. Eshelman, Jan 12 p 49
The Moon: How Valuable to Man? By R. R. Kay, June 29 p 59
President Urges Spending Boost, by R. W. Crosby, June 1 p 37
Tests Demonstrate Payoff of New Brazing Alloy, by R. C. Kopituk, Apr 13 p 90
Welding Meets Challenge of Space Age Metals, by R. R. Irving, Apr 6 p 99

Aircraft

Computers: Supersonic Market, by R. R. Kay, May 25 p 88
Duo Jetliner Looms, Apr 20 p 117
Guard Against Fatigue Failures, by J. B. Barriage, Feb 16 p 111
Precision Rules Space Tooling, by R. H. Eshelman, Feb 16 p 93
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49
Will Reds Beat U. S. With 2000 MPH Plane? June 15 p 91

Aircraft, Engines & Parts

Dynamic Honing Rids Trouble in Hydraulic Fluid Lines, by C. A. Balman, May 25 p 108
For Small Plants: Tips on Bids, by K. W. Bennett, Apr 13 p 62
New Bearings Free of Friction, Apr 13 p 97
Vibratory Finishing the Key to Smoother Surfaces, by W. E. Brandt, May 18 p 135

Aircraft Industry

Aerospace Hunts New Metals, by R. R. Kay, Apr 27 p 91
Aerospace Spotlighted at Show, by R. R. Kay, Mar 30 p 93
"Contractor Teams" Line up for Space Age, Mar 9 p 73
Defense Switch Feelings Mixed, by R. R. Kay, Feb 23 p 81
Farwest Retains 1960 Optimism, by R. R. Kay, Jan 5 p 107
How Aircraft Makers Diversify, by R. R. Kay, Jan 19 p 63
Industrial Boom Hits Arizona, by R. R. Kay, Apr 13 p 75
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81

Air Reduction Sales Co.:

Rotating Unit Welds Pipeline, Mar 9 p 95

Alco Products, Inc.:

Film Processor Unravels Snag in Radiographic Testing, by George O'Brien, Jan 26 p 76

Allegheny Ludlum Steel Corp.:

Commodity Pricing Hits Steel, by G. J. McManus, May 11 p 75
New Vacuum-Melt Furnace Starts up, Jan 26 p 47

Allis-Chalmers Mfg. Co.:

Engineers Come to Grips With Weld Distortion, Feb 23 p 104

Alloy Steel

Aluminum in Stainless Alloy Improves Machinability, Mar 16 p 118
Argon Teeming: Extra Refinement to Vacuum Degassing of Steel, May 18 p 146
Can Hot Machining Techniques Keep Pace With New Alloys? Mar 2 p 98
Can Uranium Improve Steel? By S. I. Gertsman, Apr 6 p 110
Cleaner Chrome Boon to Melters, June 15 p 116
Fresh Approach in Machining Takes Aim on Hard Steels, by R. H. Eshelman, Apr 27 p 101
Heat-Treat and Shot-Peen Cycle Cuts Torsional Stresses, June 1 p 70
New Heat-Treat Lines for Plate Bank on Growing Alloy Markets, by G. J. McManus, Mar 9 p 85
New Heat-Treatable Carbides Offer Job Versatility, by J. L. Ellis, Mar 2 p 92
Quench Side Rails for Hardness, Apr 27 p 109
Salt Bath Promises Low Alloys New Horizons in Design, June 1 p 68
Super-Strong Shapes Hit Market, by G. J. McManus, May 18 p 112
Tests Demonstrate Payoff of New Brazing Alloy, by R. C. Kopituk, Apr 13 p 90

Alloys

Can Copper Alloys Hold the Line at Ultralow Temperatures? By C. L. Bulow, Mar 9 p 92
Can Hot Machining Techniques Keep Pace With New Alloys? Mar 2 p 98
New Powder-Metallurgy Process Makes Parts in Vacuum, by R. H. Eshelman, May 25 p 101
Step-by-Step Controls Pay Off in Machining Hi-Temp Alloys, May 18 p 142
Sulphur Aids Copper Machining, by E. E. Frisk, Jan 26 p 74
Welding Meets Challenge of Space Age Metals, by R. R. Irving, Apr 6 p 99
Tailored Alloys Help to Solve Investment-Casting Problems, by R. H. Eshelman, May 11 p 114

Aluminum

Aluminum Axle Housing Next? By A. E. Fleming, June 1 p 51
Aluminum for Car Wheels? By A. E. Fleming, May 4 p 71
Aluminum Engines at Crossroads, by A. E. Fleming, June 29 p 57
Aluminum Expansion to Cost $75 Million, June 1 p 53
Aluminum, Thin Tinplate Battle for Frozen Citrus Market, by G. J. McManus, June 22 p 35
Aluminum Ties in With Fabricators, Mar 2 p 138
Bumpers: Aluminum vs Steel, May 11 p 91
Chrysler Plugs Aluminum Engine, by A. E. Fleming, Feb 9 p 91
Commodity Pricing Rapped by Alcoa, Apr 27 p 70
Complex Rotors Cast to Shape, May 11 p 113
Farwest Retains 1960 Optimism, by R. R. Kay, Jan 5 p 107
GM Uses Semi-Permanent Molds to Cast Aluminum V-8 Blocks, Feb 16 p 108
Gloves Off in Auto Bumper War, by A. E. Fleming, May 18 p 121
Improved Aluminum Offers Lifetime Brightness, by A. L. Moxon S. H. Wyman, Mar 23 p 78
Metal Can Market Keeps Growing, by K. W. Bennett, Feb 9 p 81
New Aluminum Use, June 8 p 68
New Markets Help Aluminum, by F. J. Starin, Jan 5 p 95
New Research Cars Highlight Aluminum, Apr 6 p 87
Production Setups Extend Scope of Diecast Aluminum Engines, by R. H. Eshelman, Mar 16 p 120
Two Passes Weld Heavy Plate, Feb 9 p 120
Welded Tubes Wind Foil Evenly, June 22 p 132

Aluminum Company of America

Aluminum Aims at Auto Market, Jan 12 p 34
Aluminum Axle Housing Next? By A. E. Fleming, June 1 p 51
Commodity Pricing Rapped by Alcoa, Apr 27 p 70
Government Blocks Aluminum Mergers, May 4 p 130

American Brake Shoe Co.:

Automated System Forges Parts Without Any Operator Effort, May 11 p 116
Gas Powers Metalforming Giant, June 29 p 74

American Iron & Steel Institute, Inc.:

AISI: Good Times Are Ahead, by Tom Campbell, June 1 p 35
Highlights of AISI Meeting: Optimism and Caution, by Tom Campbell, June 1 p 36
Steel Distribution by Consuming Industries, Table, Apr 27 p 68

American Motors Corp.:

Cutter Mill Speeds Piston Flow, Feb 2 p 91

American Society for Metals

Computer Speeds Up Metalworking Data, June 1 p 41

American Welding Society

Weld Experts Gather, Apr 6 p 138

Anaconda Aluminum Co.:

Welded Tubes Wind Foil Evenly, June 22 p 132

Antitrust, see Government; Legislation

Appliances

Appliance Makers Sight Upturn, by T. M. Rohan, June 15 p 76

Appliances Try for a Recovery, by K. W. Bennett, Feb 16 p 76
Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
Electro-Spray Paints Odd Sizes, May 18 p 141
Industry Reels Under Buffeting by Winter's Icy Blasts, Feb 9 p 77
Integrated Tools Shape Shafts, by H. E. Benn, Feb 2 p 92
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Shrink Fittings Speed Assembly of Diecast Rotors on Shafts, Mar 2 p 90

Arbitration, See Industrial Relations

Arcrods Corp.:

What's the State of Welding Behind the Iron Curtain? By G. E. Claussen, Feb 2 p 81

Armco Steel Corp.:

Fluid Mold Aids Forging Finish, Mar 30 p 111
Immersion Tests Reduce Waste, Apr 6 p 112
Tricks of the Trade Pay Off in Machining Stainless, by G. J. Stevens, Apr 20 p 140
USWA Launches All-Out Drive to Organize S. Ohio Workers, by T. M. Rohan, May 4 p 55

Armour Research Foundation

How to Step Up the Efficiency of Assembly Line Operations, June 8 p 89

Armstrong Cork Co.:

Adhesive Bonding of Metals: What Are Design Factors? June 15 p 110

Atlantic Can Co.:

Magnets Space Sheets at Press, Feb 2 p 94

Atomic Energy

Argon Flush: Key to Fabrication of Titanium-Clad Steel, by C. L. Kobrin, Apr 27 p 110
Bethlehem Delivers 'Atom' Assignment, Feb 2 p 61
How Space-Age Energy Sources Spark Rise of New Materials, by R. M. Treco, Mar 2 p 87
Immersion Tests Reduce Waste, Apr 6 p 112
New Powder-Metallurgy Process Makes Parts in Vacuum, by R. H. Eshelman, May 25 p 101
Nuclear Device Keeps Tabs on Blast Furnace Burden, Apr 20 p 134
Nuclear Market to Explode—If, by F. J. Starin, Mar 9 p 60
Nuclear Men View Safety Problems, by G. J. McManus, June 15 p 79
Reactor Gets Repair-Free Welds, Feb 16 p 106
Welding Meets Challenge of Space Age Metals, by R. R. Irving, Apr 6 p 99

Automation

Are Computers Taking Over Management's Functions? By G. J. McManus, Mar 30 p 69
Automated System Forges Parts Without Any Operator Effort, May 11 p 116
Automated Torches Cut Billets, by Richard Bechtle, Feb 16 p 114
Automatic Assembly Isn't Dead, by R. H. Eshelman, Mar 2 p 79
Axles Welded in a Vapor Shield, by R. H. Eshelman, Jan 19 p 78
Better Days Ahead in Scrap? Jan 19 p 53
Cold Extrusions Forge Ahead, June 15 p 103
Cold-Joint Problems Disappear on Automated Soldering Line, by R. H. Eshelman, Jan 26 p 69
Computers Talk Shop Language, June 22 p 127
Conveyor Lines Speed Assembly of Precision Instruments, Apr 6 p 108
Does a Transfer Line Pay Off? By Elmer Zarnke, June 8 p 96
Efficient Monorail System Absorbs Finishing Line, by J. K. Harlow, Jan 12 p 62
England Is Going Automatic, by R. H. Eshelman, Jan 19 p 65
Grinding Wheels Get Quick Mix, Feb 23 p 102
Hand Assembly: Does It Pay? By R. H. Eshelman, Apr 27 p 93
Heat Treating Goes Automatic, by R. H. Eshelman, June 8 p 79
House Automation Hearings: Short Workweek Sounding Board, by H. R. Neal, Mar 16 p 79
Is Tool Production Faltering? By R. H. Eshelman, Apr 20 p 119
Labor Costs Force Automation, by R. H. Eshelman, May 11 p 95
Maintenance Costs Can Be Cut, by K. W. Bennett, Feb 2 p 56
Man-Machine Teamwork Closer, by R. H. Eshelman, Mar 30 p 95
New Tool Concepts Are Needed, by R. H. Eshelman, May 18 p 125
One-Machine Shop Speeds Work, by R. H. Eshelman, Feb 23 p 83
Plan for Merged Automation, Apr 27 p 87
Progressive Automation: A Way to Fight Foreign Competition, by G. W. Jernstedt, Apr 20 p 129
Reactor Gets Repair-Free Welds, Feb 16 p 106
Reclaimable Composite Molds Automate Casting Lines, June 15 p 108
Robot Handles Forging Job, Mar 2 p 96
Shrink Fittings Speed Assmbly of Diecast Rotors on Shafts, Mar 2 p 90
Soldering Lines Go Automatic, June 1 p 65
Steel Foundry Adds Sand Mixing to Program of Automation, May 4 p 88
Strip Mill Applies Simulator to Guide Tinplating Line, Mar 16 p 114
System Automates All Handling of Big Structural Assemblies, by R. H. Eshelman, Jan 19 p 75
Tape-Controlled Mill Checked Quickly With New Recorder, Apr 27 p 112
Unit Couples Heat Treating Steps, Jan 12 p 70
U. S. Names Grow at Hanover Fair, by E. C. Beaudet, May 11 p 78
Vending Hits the Jackpot, by G. J. McManus, June 29 p 40
What's the State of Welding Behind the Iron Curtain? By G. E. Claussen, Feb 2 p 81

See also Data Processing; Electronic Devices & Controls; Machine Tools.

Automobiles & Trucks

Automakers Demand Finer Finish, by T. M. Rohan, Apr 6 p 69
Automakers Preview the Future, by A. E. Fleming, Jan 19 p 50
Auto Market Grows in Los Angeles, Mar 2 p 77
Bright Annealed Demand Rises, by A. E. Fleming, Mar 2 p 75
Compacts Follow Corvair Lead, by A. E. Fleming, Mar 30 p 91
Congress Probes Auto Safety, by A. E. Fleming, Apr 6 p 87
Copper Fights Cost Problems, by A. E. Fleming, Mar 23 p 63
Electric Truck Makes Headway, by B. F. Surer, June 8 p 66
Ford Develops a 'Little' V-8, by A. E. Fleming, Feb 16 p 89
Ford Readies More Compacts, by A. E. Fleming, Jan 12 p 45
Foreign Automakers Push Sales, But Predict a U. S. Shakeout, by F. J. Starin, Apr 13 p 59
Foreign Car Price Cuts Coming, by A. E. Fleming, Feb 2 p 69
Galvanized Sheet Market Grows, by G. J. McManus, June 1 p 40
How Automakers Mold Stainless Market, June 15 p 82
Industry Reels Under Buffeting by Winter's Icy Blasts, Feb 9 p 77
Industrial Truck Prices Soft, Jan 5 p 162
Industrial Trucks Add Features, Mar 16 p 162
Lead and Zinc Outlook Brightens, May 11 p 83
Machine Steps up Paint Mileage, by E. A. Zahn, Mar 16 p 116
New Entry for Autos: Buffed Stainless, June 22 p 89
Plastics Have Designs on Cars, by A. E. Fleming, Feb 23 p 79
'62 Cars Get Beauty Treatment, by A. E. Fleming, May 25 p 87
Sports Car Trend Shapes Up, by A. E. Fleming, May 11 p 91
Weather Warms Up Car Market, by A. E. Fleming, May 25 p 74
What New-Car Buyers Want, Feb 9 p 91

Automobiles & Trucks, Engines & Parts

Aluminum Aims at Auto Market, Jan 12 p 34
Aluminum Axle Housing Next? By A. E. Fleming, June 1 p 51
Aluminum for Car Wheels? By A. E. Fleming, May 4 p 71
Aluminum Engines at Crossroads, by A. E. Fleming, June 29 p 57
Automakers Ready New Engines, by A. E. Fleming, June 22 p 101
Axles Welded in a Vapor Shield, by R. H. Eshelman, Jan 19 p 78
Body Battle Flares in Detroit, by A. E. Fleming, Mar 23 p 47
Bumpers: Aluminum vs Steel, May 11 p 91
Chrysler Plugs Aluminum Engine, by A. E. Fleming, Feb 9 p 91
Commodity Pricing Hits Steel, by G. J. McManus, May 11 p 75
Cutter Mill Speeds Piston Flow, Feb 2 p 91
Engineers Advance Gas Turbine, by A. E. Fleming, Mar 9 p 71
Ford Develops Small V-8 Engine, by A. E. Fleming, June 15 p 89
Ford May Try Stainless Mufflers, Feb 2 p 69
Front Wheel Drive Is Hot Topic, Jan 12 p 45
GM Uses Semi-Permanent Molds to Cast Aluminum V-8 Blocks, Feb 16 p 108
Gloves Off in Auto Bumper War, by A. E. Fleming, May 18 p 121
Heat-Treat and Shot-Peen Cycle Cuts Torsional Stresses, June 1 p 70
L. A. Smog: It Is Still a Problem, by R. R. Kay, June 22 p 103
More Power at Indianapolis? By R. R. Kay, May 18 p 123
New Three-Speed Axle, June 29 p 57
A New Trend in Small Engines? By A. E. Fleming, Jan 26 p 57
New Uses for Porcelain Enamel? By A. E. Fleming, Apr 13 p 73
Production Setups Extend Scope of Diecast Aluminum Engines, by R. H. Eshelman, Mar 16 p 120
Research Attacks Seal Leakage, June 1 p 72
Soldering Lines Go Automatic, June 1 p 65
Zinc Staves Auto Comeback, by A. E. Fleming, Jan 5 p 105

Automotive Industry

Auto Strike Hinges on Sales, by A. E. Fleming, Feb 9 p 80
Automakers Ready for 1962, by A. E. Fleming, June 8 p 75
Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
Can Automakers Hold Sales Gains of '60? Jan 5 p 97
Ford Buys Two Autolite Plants, by A. E. Fleming, Apr 20 p 115
Fords Says Hold Labor Cost Line, by A. E. Fleming, Mar 16 p 95
GM Defends U. S. Auto Industry, by A. E. Fleming, Jan 19 p 61
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
More Changes at Chrysler, Feb 16 p 89
New Cars Back up on Dealers; Automakers Fight '58 Trend, by A. E. Fleming, Feb 23 p 63
Recession That Wasn't There Should Fade in Early Fall, by Tom Campbell, Jan 5 p 89
Short-Term Outlook Is Bright, by J. D. Baxter, May 25 p 80
Tool Orders Are Picking Up, by R. H. Eshelman, May 4 p 75
UAW Draws Bargaining Plans, by A. E. Fleming, May 4 p 58
VW's Nordhoff on World Trade, by E. C. Beaudet, May 25 p 76
What's Ahead for Chrysler? By A. E. Fleming, Apr 27 p 89

Avnet Electronics Corp.:

Reclaimable Composite Molds Automate Casting Lines, June 15 p 108

B

Bars & Shapes

Forecast Scrap Losses in Machining, Feb 16 p 116
New Mill Hikes Bar Production, Mar 30 p 114
Steel Strikes Back at Imports, by T. M. Rohan, Feb 23 p 68
Super-Strong Shapes Hit Market, by G. J. McManus, May 18 p 112

Battelle Memorial Institute

Automakers Preview Metals Outlook, Mar 23 p 48
Roll-Weld Method Bonds Panels, Apr 27 p 114
Rotating Unit Welds Pipelines, Mar 9 p 95

Batteries

Fords Buys Two Autolite Plants, by A. E. Fleming, Apr 20 p 115
Lead and Zinc Outlook Brightens, May 11 p 83

Bay State Abrasives Co.:

Grinding Wheels Get Quick Mix, Feb 23 p 102

Bearings

Bearings Prices: A Rise Coming? Apr 20 p 105
Bearing Simulator Plots Design, May 4 p 93
Force-Fit Problems Fade Away With New Unground Bearings, by W. N. Redstreake, Mar 9 p 90
New Bearings Free of Friction, Apr 13 p 97

Bell Telephone Laboratories

Bell Labs Boost Magnet Potential, Feb 16 p 81
Germanium Gets a Finer Polish, Apr 20 p 139

Bendix Corp.:

Front Wheel Drive Is Hot Topic, Jan 12 p 45
New Bearings Free of Friction, Apr 13 p 97

Beryllium

Beryllium Bolts Gain Strength, Apr 6 p 107
Beryllium Supply Is Assured, June 22 p 37

Bethlehem Steel Co.:

Bethlehem Delivers 'Atom' Assignment, Feb 2 p 61
Fabricating Work on Coast Resumed, Apr 6 p 89

Good Planning Precludes Snags in Casting Huge Impellers, Mar 9 p 88
New Mill Hikes Bar Production, Mar 30 p 114
Vacuum-Cast Ingot Biggest Ever Made, June 29 p 42

Birdsboro Corp.:

Vectors Define Casting Flaws, June 29 p 70

The Boeing Company:

Boeing Bounces Back, Apr 27 p 91
How Aircraft Makers Diversify, by R. R. Kay, Jan 19 p 63

Bonding

Adhesive Bonding of Metals: What Are Design Factors? June 15 p 110
New Heat-Treatable Carbides Offer Job Versatility, by J. L. Ellis, Mar 2 p 92
Roll-Weld Method Bonds Panels, Apr 27 p 114

See also Joining; Welding & Welding Machines

Brazing

Tests Demonstrate Payoff of New Brazing Alloy, by R. C. Kopituk, Apr 13 p 90

Bridgeport Brass Co.:

Can Copper Alloys Hold the Line at Ultralow Temperatures? By C. L. Bulow, Mar 9 p 92
Sulphur Aids Copper Machining, by E. E. Frisk, Jan 26 p 74

British Welding Research Assn.:

Are Welding Codes Outdated? By R. Weck, Mar 16 p 109

Broaching

Broaches Yield Tight Finishes, Jan 12 p 65

Brunswick Corp.:

How Radomes and Nose Cones Are Handled With Care, May 25 p 111

Brush Instruments Co.:

Tape-Controlled Mill Checked Quickly With New Recorder, Apr 27 p 112

Bryant Industrial Products Corp.:

Shrink Fitting: A Six-Second Job, by O. C. McNairn, June 8 p 98

Buell Die & Machine Co.:

TV Camera Can Cut Tool Costs, by R. H. Eshelman, Mar 16 p 99

Buoys

Plastic Chain Makes Its Bid, Apr 20 p 132

Burroughs Corp.:

Cold-Joint Problems Disappear on Automated Soldering Line, by R. H. Eshelman, Jan 26 p 69
Computer Adds Efficiency to Inventory Control, Apr 13 p 94

Business, see Forecasting; Industrial Expansion; also individual industries

C

Calow & Co.:

Shaver Skins Rod Quickly, June 15 p 113

Cameron Iron Works, Inc.:

Giant Press Lifts Size Limits of Closed Die Forgings, Jan 12 p 66

Canada

Canadian Iron & Steel, Jan 5 p 223, p 232
Continuous Casting Faces Test, by G. J. McManus, May 18 p 110
How Serious Is Rift Between U. S. and Canada? By Tom Campbell, Jan 26 p 50
Iron Ore Work Booms in Canada, by Tom Campbell, Mar 9 p 62
Reactor Gets Repair-Free Welds, Feb 16 p 106

Capital Goods Appropriations, see Industrial Expansion; also individual industries

Carbides, See Tools, Cutting

The Carpenter Steel Co.:

New Tool Steel Uses Tungsten to Lubricate Forming Punch, June 15 p 106

Casting

How to Plan Production Runs With Precision in Mind, by W. N. Redstreake, May 11 p 105

Casting, Continuous

Continuous Casting Faces Tests by G. J. McManus, May 18 p 110

Casting, Die

Price Policy Lures Mg Users, by F. J. Starin, Feb 2 p 58
Production Setups Extend Scope of Diecast Aluminum Engines, by R. H. Eshelman, Mar 16 p 120
Shrink Fittings Speed Assembly of Diecast Rotors on Shafts, Mar 2 p 90

Castings, Ferrous

Iron Founders See Better Year, Jan 5 p 178
Shell Coring Castings Grow, June 8 p 120
Slump Hits Gray Iron Founders, Jan 5, p 154
Steel Founders Face Problems, Jan 5 p 196
Steel Founders Remain Cautious, But Business Is on the Mend, by K. W. Bennett, Mar 23 p 45
Steel Foundry Adds Sand Mixing to Program of Automation, May 4 p 88
Vacuum-Cast Ingot Biggest Ever Made, June 29, p 42
Vectors Define Casting Flaws, June 29 p 70

Casting, Investment:

Developments Spur Interest in Investment Casting, by C. L. Kobrin, Feb 23 p 100
Tailored Alloys Help to Solve Investment-Casting Problems, by R. H. Eshelman, May 11 p 114

Castings, Nonferrous

Aluminum Axle Housing Next? By A. E. Fleming, June 1 p 51
Cast Titanium by New Method, Mar 23 p 85
Complex Rotors Cast to Shape, May 11 p 113
GM Uses Semi-Permanent Molds to Cast Aluminum V-8 Blocks, Feb 16 p 108
Good Planning Precludes Snags in Casting Huge Impellers, Mar 9 p 88
Production Setups Extend Scope of Diecast Aluminum Engines, by R. H. Eshelman, Mar 16 p 120
Sales Boost Is Key to Profits, Jan 5 p 182

Casting, Permanent Mold

Cutter Mill Speeds Piston Flow, Feb 2 p 91
Fluid Mold Aids Forging Finish, Mar 30 p 111
GM Uses Semi-Permanent Molds to Cast Aluminum V-8 Blocks, Feb 16 p 108

Casting, Sand

Reclaimable Composite Molds Automate Casting Lines, June 15 p 108
Steel Foundry Adds Sand Mixing to Program of Automation, May 4 p 88

Casting, Vacuum

Developments Spur Interest in Investment Casting, by C. L. Kobrin, Feb 23 p 100
Glass Helps Metals to Raise High-Temperature Barriers, Jan 12 p 57
Vacuum-Cast Ingot Biggest Ever Made, June 29 p 42

Celanese Corp. of America:

Strong Plastic Shapes Easily, Mar 2 p 95

Ceramics

New Alumina Shapes Hard Steel, Washes Molds, Improves Paint, May 18 p 144
New Uses for Porcelain Enamel? By A. E. Fleming, Apr 13 p 73

Chains & Cables

Plastic Chain Makes Its Bid, Apr 20 p 132

Chase Electronics Co.:

Complex Rotors Cast to Shape, May 11 p 113

Chemetron Corp.:

Kaldo Process Makes U. S. Debut, by G. J. McManus, Apr 20 p 104

Chemicals

New Alumina Shapes Hard Steel, Washes Mold, Improves Paint, May 18 p 144
Plastics Reach for New Highs, Feb 16 p 79

China

How Fast Is Red China Moving? By Tom Campbell, Apr 27 p 74
Is Red Chinese Metallurgy Taking a "Leap Forward"? By C. L. Kobrin, Mar 23 p 82
Japan Fights Raw Materials Gap, by Tom Campbell, Apr 6 p 72
Strong U. S. Stand Urged in Laos, by Tom Campbell, Mar 30 p 72

See also Foreast; Japan

Chromalloy Corp.:

New Heat-Treatable Carbides Offer Job Versatility, by J. L. Ellis, Mar 2 p 92

Chromium

Cleaner Chrome Boon to Melters, June 15 p 116

Chrysler Corp.:

Chrysler Plugs Aluminum Engine, by A. E. Fleming, Feb 9 p 91
Conveyors Link Forging Line, by R. H. Eshelman, May 4 p 91
Engineers Advance Gas Turbine, by A. E. Fleming, Mar 9 p 71
More Changes at Chrysler, Feb 16 p 89
What's Ahead for Chrysler? By A. E. Fleming, Apr 27 p 89

Cincinnati Milling Machine Co.:

Can Hot Machining Techniques Keep Pace With New Alloys? Mar 2 p 98
Heat Treating Goes Automatic, by R. H. Eshelman, June 8 p 79
Orders Keyed to Tax Reform, by R. H. Eshelman, Feb 2 p 73
USWA Launches All-Out Drive to Organize S. Ohio Workers, by T. M. Rohan, May 4 p 55

Clad Metals

Argon Flush: Key to Fabrication of Titanium-Clad Steel, by C. L. Kobrin, Apr 27 p 110
Commodity Pricing Rapped by Alcoa, Apr 27 p 70
New Heat-Treatable Carbides Offer Job Versatility, by J. L. Ellis, Mar 2 p 92

Cleaning & Finishing

Aluminum Aims at Auto Market, Jan 12 p 34
Automakers Demand Finer Finish, by T. M. Rohan, Apr 6 p 69
Burrs Spur Finishing Progress, by R. H. Eshelman, Apr 13 p 77
Centrifugal Force Adds Luster to Barrel Tumbled Parts, by R. R. Irving, Feb 2 p 84
Dynamic Honing Rids Trouble in Hydraulic Fluid Lines, by C. A. Balman, May 25 p 108
Easy-to-Apply Resin Coatings Block Corrosive Attacks, Apr 13 p 92
Efficient Monorail System Absorbs Finishing Line, by J. K. Harlow, Jan 12 p 62
Fast Spin in Cob-Meal Mixture Removes Machining Marks, Jan 12 p 60
Germanium Gets a Finer Polish, Apr 20 p 139
Improved Aluminum Offers Lifetime Brightness, by A. L. Moxon & S. B. Wyman, Mar 23 p 78
Jet Stream Cuts Die Downtime, Feb 9 p 113
New Entry for Autos: Buffed Stainless, June 22 p 89
Strip Mill Applies Simulator to Guide Tinplating Line, Mar 16 p 114
Vibratory Finishing Speeds Work on Metals and Plastics, by F. D. Hodges, Jan 26 p 72
Vibratory Finishing the Key to Smoother Surfaces, by W. E. Brandt, May 18 p 135

Cleveland Electrical Vehicle Co.:

Electric Truck Makes Headway, by B. F. Surer, June 8 p 66

Cleveland Hobbing & Machine Co.:

Chipbreaker Extends Tool Life, Feb 9 p 117

Coal & Coke

Gas Injection for Blast Furnace? By C. L. Kobrin, Feb 9 p 107

Cogsdill Tool Products, Inc.

Burrs Spur Finishing Progress,

by R. H. Eshelman, Apr 13 p 77

Columbium

Columbium Curbs Wrinkling in Forming Stainless Steel, by C. T. Evans, Jr., Feb 23 p 96

Common Market, See Europe; Foreign Investments; Foreign Trade

Communications

Bell Labs Boost Magnet Potential, Feb 16, p 81
Computer Adds Efficiency to Inventory Control, Apr 13 p 94
Efficient Monorail System Absorbs Finishing Line, by J. K. Harlow, Jan 12 p 62
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49

Compressors

Pump Makers Fight Rising Costs, Jan 5 p 188

Computers, See Data Processing

Consolidated Controls Corp.:

Robot Handles Forging Job, Mar 2 p 96

Construction

Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
Building Paces Steel Upswing, by R. R. Kay, May 11 p 93
California Construction Rises, by R. R. Kay, Mar 2 p 77
Coast Steelmakers Optimistic, by R. R. Kay, Mar 9 p 73
Computer Solves Layout Problem, Mar 30 p 110
Cost, Dollar Value Challenge New Home Market by B. F. Surer, Mar 9 p 55
Do Open-Web Beams Compete? June 22 p 129
Industry Reels under Buffeting by Winter's Icy Blasts, Feb 9 p 77
New Aluminum Use, June 8 p 68
Profits Will Probably Drop, Jan 5 p 128
Recession That Wasn't There Should Fade in Early Fall, by Tom Campbell, Jan 5 p 89
Short-Term Outlook Is Bright, by J. D. Baxter, May 25 p 80
West Building Boom Continues, by R. R. Kay, Feb 16 p 91

See also Structural Steel

Containers

Aluminum, Thin Tinplate Battle for Frozen Citrus Market, by G. J. McManus, June 29 p 35
Better Package; Bigger Profits, by K. W. Bennett, Apr 20 p 106
Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
Magnets Space Sheets at Press, Feb 2 p 94
Metal Can Market Keeps Growing, by K. W. Bennett, Feb 9 p 81

Convair/Pomona:

Dynamic Honing Rids Trouble in Hydraulic Fluid Lines, by C. A. Balman, May 25 p 108

Conventions

Aerospace Spotlighted Show, by R. R. Kay, Mar 30 p 93
Automakers Preview the Future, by A. E. Fleming, Jan 19 p 50
Better Package; Bigger Profits, by K. W. Bennett, Apr 20 p 106
Design Experts Meet, May 11 p 167
1961 Meetings and Conventions, Jan 5 p 240
Seattle Set for World's Fair, by R. R. Kay May 4 p 73
Shows Prove Business Is Better, June 1 p 42
U. S. Names Grow at Hanover Fair, by E. C. Beaudet, May 11 p 78
Weld Experts Gather, Apr 6 p 138

Coolants

High-Speed Machining Triggers Output of Nonferrous Parts, May 4 p 95

Copper

Can Copper Alloys Hold the Line at Ultralow Temperatures? By C. L. Bulow, Mar 9 p 92
Copper-Brass Probe Puzzles Industry, Mar 23 p 122
Copper Fights Cost Problems, by A. E. Fleming, Mar 23 p 63
Copper: Higher Prices Coming? May 4 p 57
Copper Researches New Products, Jan 26 p 114
Japanese Need More U. S. Copper Scrap, June 22 p 180
Kennecott Move Affects Price, Apr 20 p 186
Profit Margins Will Shrink, Jan 5 p 136
Sulphur Aids Copper Machining, by E. E. Frisk, Jan 26 p 74

Corrosion

Easy-to-Apply Resin Coatings Block Corrosive Attacks, Apr 13, p 92
Galvanized Panels Improved by Magnesium Additions, June 8 p 100
New Oils Lick Rust Problem, by W. N. Redstreake, June 8 p 92
Plastic Chain Makes Its Bid, Apr 20 p 132
Welded Titanium Tubing Curbs Corrosive Attack of Acids, Jan 12 p 68
Zinc Stages Auto Comeback, by A. E. Fleming, Jan 5 p 105

Costs, see Management

Crane Co.:

Computer Adds Efficiency to Inventory Control, Apr 13 p 94

Cross Co.:

Broaches Yield Tight Finishes, Jan 12 p 65
Man-Machine Teamwork Closer, by R. H. Eshelman, Mar 30 p 95

Crucible Steel Co.:

D-H Process: Vacuum Degassing Handles Openhearth Heats, May 25 p 104
Performance Pressure Increases, Jan 26 p 108

D

Data Processing

Are Computers Taking Over Management's Functions? By G. J. McManus, Mar 30 p 69
Computer Adds Efficiency to Inventory Control, Apr 13 p 94
Computers: A Production Cure? By R. H. Eshelman, June 15 p 93
Computer Solves Layout Problem, Mar 30 p 110
Computer Speeds Up Metalworking Data, June 1 p 41
Computers: Supersonic Market, by R. R. Kay, May 25 p 88
Computers Talk Shop Language, June 22 p 127
Fast Computer Gives Big View, by G. J. McManus, Feb 9 p 82
New Tool Steel Uses Tungsten to Lubricate Forming Punch, June 15 p 106
Plant Repairs Get Fast Action With Data-Processing Method, by W. J. Smith, May 4 p 86
Robot Handles Forging Job, Mar 2 p 96

Danielson, Lee E.:

Report Promotes Engineers' Role, Jan 26 p 49

Dayton Perforators, Inc.:

Are All Those Punches Needed? By H. R. Hugo, Jan 19 p 82

Deburring

Burrs Spur Finishing Progress, by R. H. Eshelman, Apr 13 p 77
Vibratory Finishing Speeds Work on Metals and Plastics, by F. D. Hodges, Jan 26 p 72

Defense

Defense Buying Changes Asked, by J. D. Baxter, Jan 19 p 48
Defense Contracts Spread More Evenly, Feb 9 p 77
Defense Switch Feelings Mixed, by R. R. Kay, Feb 23 p 81
Democracy Needs Top Tooling, by R. H. Eshelman, June 22 p 105
For Small Plants: Tips on Bids, by K. W. Bennett, Apr 13 p 62
Military Procurement Practices: Target of Three-Pronged Attack, by R. W. Crosby, Feb 16 p 73
President Urges Spending Boost, by R. W. Crosby, June 1 p 37

Degussa-Durferrit:

Salt Bath Promises Low Alloys New Horizons in Design, June 1 p 68

Depreciation, See Taxation

DeRose, Louis J.:

Negotiated Buying Cuts Costs, Apr 13 p 138
Should Buyers Look Overseas? June 22 p 172

Design

Adhesive Bonding of Metals: What Are Design Factors? Jun 15 p 110
Bearing Simulator Plots Design, May 4 p 93
Body Battle Flares in Detroit, by A. E. Fleming, Mar 23 p 47
Design Experts Meet, May 11 p 167
How Creative Stamping Design Can Effect Stock Savings, by Federico Strasser, June 1 p 76
How to Plan Production Runs With Precision in Mind, by W. N. Redstreake, May 11 p 105
Infrared Film Helps Design a Better Oxygen Lance, Mar 23 p 80
Materials Engineering Raises Machine Tool Performance, by R. H. Eshelman, Mar 9 p 96
New Bearings Free of Friction, Apr 13 p 97
New Tool Concepts Are Needed, by R. H. Eshelman, May 18 p 125
Previews Highlight New Ideas at Design Engineers Show, May 11 p 124
Salt Bath Promises Low Alloys New Horizons in Design, June 1 p 68
'62 Cars Get Beauty Treatment, by A. E. Fleming, May 25 p 87
Steel Research Keeps Customers, by G. J. McManus, Jan 26 p 48
Step-by-Step Controls Pay Off in Machining Hi-Temp Alloys, May 18 p 142
Tailored Alloys Help to Solve Investment-Casting Problems, by R. H. Eshelman, May 11 p 114
U. S. Steel Urges New Design Ideas, May 4 p 59

Designers for Industry, Inc.:

Strip Mill Applies Simulator to Guide Tinplating Line, Mar 16 p 114

DeVlieg Machine Tool Co.:

Materials Engineering Raises Machine Tool Performance, by R. H. Eshelman, Mar 9 p 96

Diamonds

GE Makes Carat-Size Diamonds, Jan 19 p 81
Selection Cuts Diamond Cost, June 29 p 90

Dies

Production Setups Extend Scope of Diecast Aluminum Engines, by R. H. Eshelman, Mar 16 p 120

Herman B. Director Associates, Inc.:

Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
How to Use "Steel Consumption" in Your Market Planning, Jan 5 p 207

Distribution, see Marketing

Diversification, See Management

Dixon, Paul Rand

FTC Set to Speed Enforcement, by E. C. Beaudet, May 4 p 67

Dixon, Robert L.:

Costs "Creep" in Make or-Buy, Apr 20 p 113

Dortmund-Hoerder Huettenunion:

Plastic Chain Makes Its Bid, Apr 20 p 132

Douglas Aircraft Co.:

Duo Jetliner Looms, Apr 20 p 117

Dow Chemical Co.:

Autos to Use More Magnesium, Jan 19 p 61
Galvanized Panels Improved by Magnesium Additions, June 8 p 100
Plastics Gain Auto Markets, Jan 26 p 57
Price Policy Lures Mg Users, by F. J. Starin, Feb 2 p 58

Dravo Corp.:

Kaldo Process Makes U. S. Debut, by G. J. McManus, Apr 20 p 104

Drilling

Drill Presses Need Power Feed, June 29 p 76
Tricks of the Trade Pay Off in Machining Stainless, by G. J. Stevens, Apr 20 p 140

DuBridge, Dr. Lee A.:

Scientist Sees Boost in R & D, by R. R. Kay, Feb 9, p 93

Ductility

How to Make Simple Bend Tests, Jan 26 p 81
Welding Meets Challenge of Space

Age Metals, by R. R. Irving, Apr 6 p 99

E. I. du Pont de Nemours & Co., Inc.:

New Alumina Shapes Hard Steel, Washes Molds, Improves Paint, May 18 p 144

Dust, see Safety

E

Eastman Kodak Co.:

Film Processor Unravels Snag in Radiographic Testing, by George O'Brien, Jan 26 p 76

Eaton Manufacturing Co.:

Automated Press Widens Forging, by T. M. Rohan, Apr 13 p 64
New Ideas Cut Buying Costs, by T. M. Rohan, Feb 23 p 66
New Three-Speed Axle, June 29 p 57

Editorials

American Nationalism: What's the Matter With That? Mar 30 p 5
Anyone for Advice? Why Keep It to Yourself? May 11 p 5
Better Do It Yourself: Uncle Sam Won't Help Much, Mar 9 p 5
Business Outlook: Don't You Be an Ostrich! Mar 2 p 5
A Citizen's Report on the State of the Nation, Feb 25 p 5
Double Standards: They Can Cause Anguish, Feb 16 p 5
Freedom Is Dying: The Reds Are Killing It, May 4 p 5
Get Your Shoes Fixed: A Long Rocky Road Ahead, Jan 5 p 5
Government Steel Report: Bill of Rights for Industry, Jan 19 p 5
Haste Makes Waste in International Affairs! June 29 p 5
International Trade: It is a Complex Matter! Apr 6 p 5
Kennedy vs Khrushchev: This Is A Poor Time for It, May 25 p 5
Laos Situation: Yes, It's Quite Unclear, Apr 13 p 5
Outside the U. S. A. It Is Not the Same as Inside, Mar 16 p 5
Peace Corps: It Requires Realism, Apr 20 p 5
The Presidency: It Changes the Man, Jan 26 p 5
Realities of Recovery: Sobering Items Still Remain, May 18 p 5
Red China Question: More Bothersome All the Time, Mar 23 p 5
Righteous Indignation: Whatever Happened to It? Feb 9 p 5
Rule By Fear: We Are Facing It! June 22 p 5
South American Test: We Are About to Face One, June 8 p 5
Soviet Strategy: It's a Long-Term Headache, Apr 27 p 5
State of the Nation: Youth Plots Its Course, Feb 2 p 5
Steel Prices: Are They Fish Or Fowl? June 15 p 5
Treasury's Plan: Man, What a Crazy Quilt! June 1 p 5
V. P. of World Affairs: You May Have Use for One! Jan 12 p 5

Education, see Training Programs

Electrical Equipment

Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
Complex Rotors Cast to Shape, May 11 p 113
GE Rejects Low Pricing Limit, by G. J. McManus, June 22 p 90
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Profit Potential Is Doubtful, Jan 5 p 144
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49
Thermoelectric Comes of Age, by K. W. Bennett, Apr 6 p 70

Electric Autolite Co.:

Ford Buys Two Autolite Plants, by A. E. Fleming, Apr 20 p 115

Electronic Components, See Miniaturization

Electronic Devices & Controls

Automated Torches Cut Billets, by Richard Bechtle, Feb 16 p 114
England Is Going Automatic, by R. H. Eshelman, Jan 19 p 65
Intellectronics Era Forecast, by R. R. Kay, June 15 p 91
New Crane Has "Walk-In" Girder, May 4 p 96
Nuclear Device Keeps Tabs on Blast Furnace Burden, Apr 20 p 134
One-Machine Shop Speeds Work, by R. H. Eshelman, Feb 23 p 83
Precision Rules Space Tooling, by R. H. Eshelman, Feb 16 p 93
Strip Mill Applies Simulator to Guide Tinplating Line, Mar 16 p 114
System Automates All Handling of Big Structural Assemblies, by R. H. Eshelman, Jan 19 p 75
System Gages Complex Parts, June 29 p 72

Electronics

Electronics Moves to the Top, by R. R. Kay, Apr 6 p 89
Germanium Gets a Finer Polish, Apr 20 p 139
How Quick Reaction Capability Speeds Product Development, by K. W. Bennett, June 1 p 47
Industrial Boom Hits Arizona, by R. R. Kay, Apr 13 p 75

Electroplating

Efficient Monorail System Absorbs Finishing Line, by J. K. Harlow, Jan 12 p 62
Electroplating Business Off, Feb 16 p 132
Galvanized Panels Improved by Magnesium Additions, June 8 p 100
Galvanized Sheet Market Grows, by G. J. McManus, June 1 p 40
Mechanical Plating: A Solution to Hydrogen Embrittlement? Mar 30 p 107
Strip Mill Applies Simulator to Guide Tinplating Line, Mar 16 p 114
Zinc Stages Auto Comeback, by A. E. Fleming, Jan 5 p 105

Elizabeth Iron Works

Do Open-Web Beams Compete? June 22 p 129

Elmes & King Mfg. Co.:

Big Squeeze Is Put on Metals Research, by K. W. Bennett, June 29 p 38

Embezzlement, see Insurance

Empire Steel Castings, Inc.

Steel Foundry Adds Sand Mixing to Program of Automation, May 4 p 88

Engineers & Engineering

Are Engineers Undervalued? Jan 12 p 43
Does Research Go Far Enough? Apr 6 p 68
Engineers' Salaries Keep Moving Up Feb 16 p 77
Fast Computer Gives Big View, by G. J. McManus, Feb 9 p 82
Future Shortage of Engineers Starts on Campuses Now, by J. D. Baxter, June 22 p 85
How Quick Reaction Capability Speeds Product Development, by K. W. Bennett, June 1, p 47
How to Step Up the Efficiency of Assembly Line Operations, June 8 p 89
Report Promotes Engineers' Role, Jan 26 p 49

Employment, see Labor; Training Programs

Engineering Supervision Co.:

Big Squeeze Is Put on Metals Research, by K. W. Bennett, June 29 p 38

Esso Research & Engineering Co.:

Rotating Unit Welds Pipeline, Mar 9 p 95

Europe

Continuous Casting Faces Test, by G. J. McManus, May 18 p 110
England Is Going Automatic, by R. H. Eshelman, Jan 19 p 65

See also Individual European Countries

Executives, see Management

Exhibitions, see Conventions

Expert Welding Machine Co.:

Soldering Lines Go Automatic, June 1 p 65

Exports, see Foreign Trade

Extrusion

Cold Extrusions Forge Ahead, June 15 p 103
Cold Impact Alters Grain Flow to Boost Socket Strength, June 22 p 130
Giant Press Lifts Size Limits of Closed Die Forgings, Jan 12 p 66
Materials Engineering Raises Machine Tool Performance, by R. H. Eshelman, Mar 9 p 96

F

Fabrication

Aluminum Ties in With Fabricators, Mar 2 p 138
Argon Flush: Key to Fabrication of Titanium-Clad Steel, by C. L. Kobrin, Apr 27 p 110
Automatic Assembly Isn't Dead, by R. H. Eshelman, Mar 2 p 79
Axles Welded in a Vapor Shield, by R. H. Eshelman, Jan 19 p 78
Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
Burrs Spur Finishing Progress, by R. H. Eshelman, Apr 13 p 77
Cold Impact Alters Grain Flow to Boost Socket Strength, June 22 p 130
Do Open-Web Beams Compete? June 22 p 129
Ductile Vanadium Techniques That Make Fabrication Easier, by T. W. Merrill, Feb 9 p 110
Electrospark Forming: New Way to Shape Hard-to-Form Metals, Feb 23 p 98
Engineers Come to Grips With Weld Distortion, Feb 23 p 104
Giant Press Lifts Size Limits of Closed Die Forgings, Jan 12 p 66
How Creative Stamping Design Can Effect Stock Savings, by Federico Strasser, June 1 p 76
How Explosives Weld Metals, May 4 p 83
How to Plan Production Runs With Precision in Mind, by W. N. Redstreake, May 11 p 105
How to Step Up the Efficiency of Assembly Line Operations, June 8 p 89
Metcut Provides Machining Data, by R. H. Eshelman, Jan 12 p 49
Precision Rules Space Tooling, by R. H. Eshelman, Feb 16 p 93
Profit Margin Will Shrink, Jan 5 p 136
Progressive Automation: A Way to Fight Foreign Competition, by G. W. Jernstedt, Apr 20 p 129
Reactor Gets Repair-Free Welds, Feb 16 p 106
Rock-Forging "Irons" Welds to Give Quality Tubing, by J. A. Seme, Feb 2 p 88
Roll-Weld Method Bonds Panels, Apr 27 p 114
Shaver Skins Rod Quickly, June 15 p 113
Shrink Fitting: A Six-Second Job, by O. C. McNairn, June 8 p 98
Shrink Fittings Speed Assembly of Diecast Rotors on Shafts, Mar 2 p 90
System Automates All Handling of Big Structural Assemblies, by R. H. Eshelman, Jan 19 p 75
Vibratory Finishing the Key to Smoother Surfaces, by W. E. Brandt, May 18 p 135
Welding Meets Challenge of Space Age Metals, by R. R. Irving, Apr 6 p 99

Fairs, see Conventions; Foreign Trade

Fareast

Closeups of Industrial Japan, by Tom Campbell, Part 1 Mar 23 p 59; Part 2 Mar 30 p 74; Part 3 Apr 6 p 72; Part 4 Apr 13 p 87; Part 5 Apr 20 p 108; Part 6 Apr 27 p 74

Farm Equipment, see Machinery, Agricultural

Fasteners

Beryllium Bolts Gain Strength, Apr 6 p 107
Distributors Face Competition, Jan 19 p 112
Hidden Causes of Bolt Failure: "Carb" and "Decarb", Mar 30 p 112
Manufacturers Lack Optimism, Jan 5 p 148
Mechanical Plating: A Solution to Hydrogen Embrittlement? Mar 30 p 107
Near-Standard Specials: A Way to Solve Fastener Problems? June 15 p 114

Ferro Powdered Metals, Inc.:

New Methods Pace Tool Design, by Horace Frommelt, Feb 9 p 118

Fiberglass, see Plastics

Fidelifax, Inc.:

How to Retain Skilled Workers, by C. V. D. Rousseau, Mar 23 p 75

Finance

Annual Embezzlements Soar, by B. F. Surer, Apr 27 p 72
Bigger Tax on Overseas Profits? By R. W. Crosby, June 15 p 77
Can New Interest Policy Work? Apr 27 p 87
Cost, Dollar Value Challenge New Home Market, by B. F. Surer, Mar 9 p 55
Everyone Raps Tax Credit Plan, by R. W. Crosby, May 25 p 71
Export Credit Overhaul Likely, by

R. W. Crosby, Mar 9 p 57
Financing a Small Business, May 25 p 85
Gold Crisis—Kill the Golden Goose? By G. F. Sullivan, Jan 19 p 52
How Depressed Area Aid Plan Works, May 25 p 75
How Local Spending Helps, May 18 p 119
Interest Rates React to Upturn, June 8 p 73
Kennedy Faces a Hornet's Nest, by R. W. Crosby, Jan 5 p 91
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Planning Shows in Steel Earnings, by R. D. Raddant, Feb 9 p 85
Some Interest Rates May Drop, Feb 23 p 77
Steel: Better Profits in '61? By G. J. McManus, Apr 6 p 76
Steel Earnings: A Bleak Quarter, May 4 p 60
We're Being Financed Out of World Markets, by G. F. Sullivan, Mar 2 p 63
Will Borrowing Spur Business? Mar 30 p 79
Will Credit Vary Much in '61? Jan 5 p 103

A. Finkl & Sons Co.:

Argon Teeming: Extra Refinement to Vacuum Degassing of Steel, May 18 p 146

Foil

How to Plan Production Runs With Precision in Mind, by W. N. Redstreake, May 11 p 105
Welded Tubes Wind Foil Evenly, June 22 p 132

The Foote-Burt Co.:

Does a Transfer Line Pay Off? By Elmer Zarnke, June 8 p 96

Ford Motor

Does a Transfer Line Pay Off? By Elmer Zarnke, June 8 p 96
Ford Builds Two Autolite Plants, by A. Fleming, Apr 20 p 115
Ford Drops a 'Little' V-8, by A. Fleming, Feb 16 p 89
Ford Drops Small V-8 Engine, by A. Fleming, June 15 p
Ford Gets New President, Apr 115
Ford May Try Stainless Mufflers, p 69
Ford Readies More Compacts, by Fleming, Jan 12 p 45
Fords Hold Labor Cost Line, E. Fleming, Mar 16 p 95

Forecasting

AISI: Good Times Are Ahead, by Tom Campbell, June 1, p 35
Appliance Makers Sight Upturn, by T. M. Rohan, June 15 p 76
Business Leaders Less Optimistic, Jan 12 p 47
Businessmen Forecast Pickup, by R. R. Kay, Apr 20 p 117
Buyer Poll Shows Bright Signs, by G. J. McManus, Mar 9 p 58
Cost, Dollar Value Challenge New Home Market, by B. F. Surer, Mar 9 p 55
Economists Are Good Managers, June 22 p 99
Electroplating Business Off, Feb 16 p 132
Farm Tool Outlook Strengthens, by K. W. Bennett, June 15 p 78
Farwest Steel Upturn Predicted, by R. R. Kay, Jan 12 p 47
How Consumers View Recession, Jan 19 p 59
How to Use Appropriations Data in Sales Forecasting, Mar 30 p 83
How to Use "Steel Consumption" in Your Market Planning, Jan 5 p 207
How Typical Is This Recession? Mar 9 p 69
Industry Outlook Brightens, by R. H. Eshelman, Feb 9 p 95
Industry Reels Under Buffeting by Winter's Icy Blasts, Feb 9 p 77
Industry's Decision Makers Say the Worst Is Over, But—, Apr 20 p 101
Recession That Wasn't There Should Fade in Early Fall, by Tom Campbell, Jan 5 p 89
Short-Term Outlook Is Bright, by J. D. Baxter, May 25 p 80
Steel Founders Remain Cautious, But Business Is on the Mend, by K. W. Bennett, Mar 23 p 45
Survey Report: What Metalworking Executives Forecast for 1961, Jan 5 p 121
"Use With Caution" Is Advice in Using Inventory Figures, by J. D. Baxter, Jan 12 p 36
Will Borrowing Spur Business? Mar 30 p 79

Foreign Investments

GM Defends U. S. Auto Industry, by A. E. Fleming, Jan 19 p 61
Gold Crisis—Kill the Golden Goose? By G. F. Sullivan, Jan 19 p 52
How Serious Is Rift Between U. S. and Canada? By Tom Campbell, Jan 26 p 50
Industry's Foreign Investment: It Has Its Plus Value, by G. J. McManus, Feb 2 p 60
Steel Puts Reins on Spending; Sales, Cash Flow Slide, by G. J. McManus, Jan 5 p 92
U. S. Loan Builds Turkey Steel Mill, Jan 12 p 39
U. S. Ore Falls Before Imports, by T. M. Rohan, Jan 12 p 38

Foreign Trade

Builder Backs Trade With Reds, by R. H. Eshelman, Apr 6 p 91
Buyer Push for Fast Delivery Blunts Steel Import Sales, by T. M. Rohan, Mar 2 p 59
Change Trade Policy—But How? By R. W. Crosby, Feb 2 p 59
Copper: Higher Prices Coming? May 4 p 57
Demand Lags for Lakes Iron Ore, by T. M. Rohan, May 11 p 77
Export Credit Overhaul Likely, by R. W. Crosby, Mar 9 p 57
Foreign Automakers Push Sales, But Predict a U. S. Shakeout, by F. J. Starin, Apr 13 p 59
Foreign Car Price Cuts Coming, by A. E. Fleming, Feb 2 p 69
How Serious Is Rift Between U. S. and Canada? By Tom Campbell, Jan 26 p 50
How to Do Business in Japan, by Tom Campbell Mar 23 p 59
Industrial Expansion, Exports Stretch Out Tool Backlog, by E. C. Beaudet, June 8 p 64
Industry's Foreign Investment: It Has Its Plus Value, by G. J. McManus, Feb 2 p 60
Investment Abroad Aids U. S., June 22 p 99
Japan Fights Raw Materials Gap, by Tom Campbell, Apr 6 p 72
Japan Must Export to Survive, by Tom Campbell, Apr 20 p 108
Japan Sets Steel Goals for 1970, by Tom Campbell, Apr 13 p 87
Japanese Ships Invade Seaway, by K. W. Bennett, June 22 p 94
New Tool Concepts Are Needed, by R. H. Eshelman, May 18 p 125
Price Edge Favors U. S. Welders, by T. M. Rohan, Apr 27 p 71
Progressive Automation: A Way to Fight Foreign Competition, by G. W. Jernstedt, Apr 20 p 129
Reevaluate the Foreign Prices, Apr 27 p 160
Scrap Exports: Key to Market? Feb 23 p 70
Should Buyers Look Overseas? June 22 p 172
Steel Expansion Rate Slows Down, by E. C. Beaudet, June 15 p 80
Steel Strikes Back at Imports, by T. M. Rohan, Feb 23 p 68
Tool Bank Idea Gets New Life, by R. H. Eshelman, Mar 23 p 64
Tool Bank Plan Is Under Attack, by B. F. Surer, May 25 p 73
Trade With U. S. World Markets, by E. C. Beaudet, June 22 p 92
U. S. Names Grow at Hanover Fair, May 11 p 78
U. S. Ore Falls Before Imports, by T. M. Rohan, Jan 12 p 38
U. S. Sinter Experts Needed Overseas, Feb 9 p 83
U. S. Slips in Tool Export Race, May 11 p 81
VW's Nordhoff on World Trade, by E. C. Beaudet, May 25 p 76
We're Being Financed Out of World Markets, by G. F. Sullivan, Mar 2 p 63
West Germany: Economy Booms, But Not Without Problems, by E. C. Beaudet, May 18 p 105
What's Ahead for U. S. Exports? By K. W. Bennett, Mar 16 p 81

Forging

Automated Press Widens Forging, by T. M. Rohan, Apr 13 p 64
Automated System Forges Parts Without Any Operator Effort, May 11 p 116
Cold Extrusions Forge Ahead, June 15 p 103
Conveyors Link Forging Line, by R. H. Eshelman, May 4 p 90
Expect Profits to Dip Lower, Jan 5 p 192
Fluid Mold Aids Forging Finish, Mar 30 p 111
Giant Press Lifts Size Limits of Closed Die Forgings, Jan 12 p 66
How to Plan Production Runs With Precision in Mind, by W. N. Redstreake, May 11 p 105
Immersion Tests Reduce Waste, Apr 6 p 112
Robot Handles Forging Job, Mar 2 p 96
Rock-Forging "Irons" Welds to Give Quality Tubing, by J. A. Seme, Feb 2 p 88

Foundry

Hoppers Aid Foundry's Moves, Apr 13 p 100
Reclaimable Composite Molds Automate Casting Lines, June 15 p 108
Steel Foundry Adds Sand Mixing to Program of Automation, May 4 p 88

Foundry Industry

Foundries Await Turning Point, Jan 5 p 272
Iron Founders See Better Year, Jan 5 p 178
Sales Boost Is Key to Profits, Jan 5 p 182
Slump Hits Gray-Iron Foundry, Jan 5 p 154
Steel Founders Face Problems, Jan 5 p 196
Steel Founders Remain Cautious, But Business Is on the Mend, by K. W. Bennett, Mar 23 p 45

Fuels

Gas Injection for Blast Furnace? By C. L. Kobrin, Feb 9 p 107

Furnaces

Infrared Film Helps Design a Better Oxygen Lance, Mar 23 p 80

Furnaces, Blast

Gas Injection for Blast Furnace? By C. L. Kobring, Feb 9 p 107
Nuclear Device Keeps Tabs on Blast Furnace Burden, Apr 20 p 134
Russians Alter Blast Furnaces to Improve Oxygen Injection, Apr 13 p 98

Furnaces, Openhearth

D-H Process: Vacuum Degassing Handles Openhearth Heats, May 25 p 104

Furnaces, Vacuum

Argon Teeming: Extra Refinement to Vacuum Degassing of Steel, May 18 p 146
New Vacuum-Melt Furnace Starts Up, Jan 26 p 47
Production Eyes New Furnace for Vacuum Heat Treating, Jan 19 p 84

Furniture

Job of Office Buyer Grows, Feb 2 p 124
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49

G

Gages, see Electronic Devices & Controls; Instruments

Garrett Corp.:

"Contractor Teams" Line Up for Space Age, Mar 9 p 73

Gas

Gas Powers Metalforming Giant, June 29 p 74

Gears

Gear Interest Is Still Strong, Mar 2 p 130
How to Repair Broken Gears, by Federico Strasser, Feb 2 p 86

General Dynamics Corp.:

Gas Powers Metalforming Giant, June 29 p 74

General Electric Co.:

Electrospark Forming: New Way to Shape Hard-to-Form Metals, Feb 23 p 98
For Small Plants: Tips on Bids, by K. W. Bennett, Apr 13 p 62
GE Makes Carat-Size Diamonds, Jan 19 p 81
GE Rejects Low Pricing Limit, by G. J. McManus, June 22 p 90
Idea Production: What to Do, What to Avoid, Feb 23 p 67
Line Managers Are the Key Men in Developing New Executives, by Moorhead Wright, Mar 2 p 71
New Powder-Metallurgy Process Makes Parts in Vacuum, by R. H. Eshelman, May 25 p 101

General Motors Corp.:

Axles Welded in a Vapor Shield, by R. H. Eshelman, Jan 19 p 78
Fast Spin in Cob-Meal Mixture Removes Machining Marks, Jan 12 p 60
GM Uses Semi-Permanent Molds to Cast Aluminum V-8 Blocks, Feb 16 p 108
Hand Assembly: Does It Pay? By R. H. Eshelman, Apr 27 p 93
Heat-Treat and Plating Wastes Go Up in a Puff of Smoke, June 8 p 94
Research Attacks Seal Leakage, June 1 p 72

Germanium

Germanium Gets a Finer Polish, Apr 20 p 139

Germany

Industrial Expansion, Exports Stretch Out Tool Backlog, by E. C. Beaudet, June 8 p 64
Labor Shortage: No Letup in Sight, by E. C. Beaudet, June 1 p 38
Steel Expansion Rate Slows Down, by E. C. Beaudet, June 15 p 80
Trade With U. S., World Markets, by E. C. Beaudet, June 22 p 92

U. S. Names Grow at Hanover Fair, by E. C. Beaudet, May 11 p 78
VW's Nordhoff on World Trade, by E. C. Beaudet, May 25 p 76
West Germany: Economy Booms, But Not Without Problems, by E. C. Beaudet, May 18 p 105

Glass

Glass Helps Metals to Raise High-Temperature Barriers, Jan 12 p 57

Gold

Alaska's Mines Are Weakening, by R. R. Kay, Mar 23 p 64
Gold Crisis—Kill the Golden Goose? By G. F. Sullivan, Jan 19 p 52

Goodyear Aircraft Corp.:

Plant Repairs Get Fast Action With Data-Processing Method, by W. J. Smith, May 4 p 86

Government

Copper-Brass Probe Puzzles Industry, Mar 23 p 122
FTC Set to Speed Enforcement, by E. C. Beaudet, May 4 p 67
GE Rejects Low Pricing Limit, by G. J. McManus, June 22 p 90
Government Blocks Aluminum Mergers, May 4 p 130
Government Urged to Keep Out of Future Steel Strikes, by R. W. Crosby, Jan 19 p 45
Highlights of AISI Meeting: Optimism and Caution, by Tom Campbell, June 1 p 36
How Depressed Area Aid Plan Works, May 25 p 75
How Local Spending Helps, May 18 p 119
How to Reduce Research Costs, Jan 19 p 51
How to Succeed in the Capitol, June 29 p 47
Is Tool Production Faltering? By R. H. Eshelman, Apr 20 p 119
Joint Antitrust Move Underway, by R. W. Crosby, Mar 30 p 73
Justice Department Policies on Merger Laws, by E. C. Beaudet, Apr 13 p 68
Kennedy Faces a Hornet's Nest, by R. W. Crosby, Jan 5 p 91
President Urges Spending Boost, by R. W. Crosby, June 1 p 37
Price Fixing (Round 11), by G. F. Sullivan, Apr 6 p 67
R & D Outlays Hit New Peak, by K. W. Bennett, Jan 5 p 94
Some Interest Rates May Drop, Feb 23 p 77
U. S. Asks: Is Steel Price Rise Needed? By R. W. Crosby, June 8 p 63
U. S. May Insure New Tool Loans, by R. W. Crosby, June 29 p 41
Washington, by R. W. Crosby, p 11 all issues
Why All Don't Answer the Call, June 1 p 45
Will Report Bring Changes? By Tom Campbell, Jan 19 p 46

See also Defense; Legislation; Purchasing; Government

G. A. Gray Co.:

Builders Force Own Recovery, by R. H. Eshelman, May 25 p 91

Great Britain

England Is Going Automatic, by R. H. Eshelman, Jan 19 p 65

Great Lakes Steel Corp.:

Gloves Off in Auto Bumper War, by A. E. Fleming, May 18 p 121

Greenlee Bros. & Co.:

Lift Trucks Handle Odd Jobs, June 1 p 75

Grinding

Grinding Wheels Get Quick Mix, Feb 23 p 102
New Tool Steel Uses Tungsten to Lubricate Forming Punch, June 15 p 106

Growth, see Industrial Expansion

Guidance, see Electronic Devices & Controls

Gulf States Land & Industries, Inc.:

Steel-from-Slag Changes Hands, Jan 26 p 52

H

Haber, Dr. William:

Labor Costs Force Automation, by R. H. Eshelman, May 11 p 95

Hallicrafters, Inc.:

How Quick Reaction Capability Speeds Product Development, by K. W. Bennett, June 1 p 47

Hamilton Watch Co.:

How to Plan Production Runs With Precision in Mind, by W. N. Redstreake, May 11 p 105

M. A. Hanna Co.:

Semi-Taconite Test, Mar 16 p 84

Hanson-Van Winkle-Munning Co.:

Efficient Monorail System Absorbs Finishing Line, by J. K. Harlow, Jan 12 p 62

Harnishfeger Corp.:

New Crane Has "Walk-In" Girder, May 4 p 96

Harper Buffing Machine Co.:

Centrifugal Force Adds Luster to Barrel Tumbled Parts, by R. R. Irving, Feb 2 p 84

Harvey Aluminum, Inc.:

Aluminum Expansion to Cost $75 Million, June 1 p 53

Haynes Stellite Co.:

Developments Spur Interest in Investment Casting, by C. L. Kobrin, Feb 23 p 100

Heating & Heating Equipment

Heat-Treat and Plating Wastes Go Up in a Puff of Smoke, June 8 p 94
How to Improve Heat Efficiency in Your Insulation System, Apr 20 p 136
Shrink Fitting: A Six-Second Job, by O. C. McNairn, June 8 p 98
Soldering Lines Go Automatic, June 1 p 65

Heat Treating

Cold Impact Alters Grain Flow to Boost Socket Strength, June 22 p 130
End White-Layer Problems on Nitrided Parts, by R. F. Erxleben, May 25 p 106
Heat-Treat and Shot-Peen Cycle Cuts Torsional Stresses, June 1 p 70
Heat Treat Market Is Slow, Jan 5 p 158
Heat Treating Goes Automatic, by R. H. Eshelman, June 8 p 79
Hidden Causes of Bolt Failure: "Carb" and "Decarb", Mar 30 p 112
New Heat-Treat Lines for Plate Bank on Growing Alloy Markets, by G. J. McManus, Mar 9 p 85
New Heat-Treatable Carbides Offer Job Versatility, by J. L. Ellis, Mar 2 p 92
Production Eyes New Furnace for Vacuum Heat Treating, Jan 19 p 84
Quench Side Rails for Hardness, Apr 27 p 109
Reversing of Heat-Treat Cycle Trims Machining Costs, by W. J. Lavigne, Feb 9 p 114
Salt Bath Promises Low Alloys New Horizons in Design, June 1 p 68
Unit Couples Heat Treating Steps, Jan 12 p 70

Hercules Aircraft Industries, Inc.:

Step-by-Step Controls Pay Off in Machining Hi-Temp Alloys, May 18 p 142

Hib Engineering, Inc.:

Infrared Film Helps Design a Better Oxygen Lance, Mar 23 p 80

Hicks, Everett M.:

Builder Backs Trade With Reds, by R. H. Eshelman, Apr 6 p 91

Hodges, Dr. Henry G.:

Modern Buying Termed a Science, May 25 p 134

Honing, see Machinery, Gear Cutting & Finishing

Hydraulics

Jet Stream Cuts Die Downtime, Feb 9 p 113

I

Imports, see Foreign Trade

Industrial Expansion

California Construction Rises, by R. R. Kay, Mar 2 p 77
California Needs More Customers, by R. R. Kay, June 8 p 77
Electronics Moves to the Top, by R. R. Kay, Apr 6 p 89
Farwest Retains 1960 Optimism, by R. R. Kay, Jan 5 p 107
GM Defends U. S. Auto Industry, by A. E. Fleming, Jan 19 p 61
How Depressed Area Aid Plan Works, May 25 p 75
How Fast Is Red China Moving? By Tom Campbell, Apr 27 p 74
Industrial Boom Hits Arizona, by R. R. Kay, Apr 13 p 75
Industrial Expansion, Exports Stretch Out Tool Backlog, by E. C. Beaudet, June 8 p 64
How to Do Business in Japan, by Tom Campbell Mar 23 p 59
Japan Fights Raw Materials Gap, by Tom Campbell, Apr 6 p 72
Japan Sets Steel Goals for 1970, by Tom Campbell, Apr 13 p 87
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Metalworking Market Widens, by R. R. Kay, June 1 p 53
N. Y. Recruits West Industries, by R. R. Kay, Feb 2 p 71
Not to Spend May Be Costly, Apr 6 p 85
Orders Keyed to Tax Reform, by R. H. Eshelman, Feb 2 p 73
Shows Prove Business Is Better, June 1 p 42
Small Business Makes Big Gains; Forges Even Brighter Future, by K. W. Bennett, June 8 p 59
Small Business Meets Change, Mar 16 p 89
Steel Expansion Rate Slows Down, by E. C. Beaudet, June 15 p 80
Steel Puts Reins on Spending; Sales, Cash Flow Slide, by G. J. McManus, Jan 5 p 92
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49
Toymakers up Tooling Outlays, by K. W. Bennett, Mar 2 p 64
Vending Hits the Jackpot, by G. J. McManus, June 29 p 40
West Building Boom Continues, by R. R. Kay, Feb 16 p 91
West Germany: Economy Booms, But Not Without Problems, by E. C. Beaudet, May 18 p 105

Industrial Management Center

Seven Ways to Get Efficiency from Material Handling, June 29 p 67

Industrial Relations

Arbitration Costs Are Climbing, But Are They Excessive? By H. R. Neal & K. W. Bennett, Feb 2 p 53
Are Employees Discontented? Feb 16 p 87
Avoid the Short-Term Freeze, Feb 16 p 87
Detroit Tool, Die Shops Unite, by R. H. Eshelman, Jan 26 p 61
Good Communications Are Vital, Feb 9 p 89
How Quick Reaction Capability Speeds Product Development, by K. W. Bennett, June 1 p 47
How to Boost tthe Efficiency of Supervisory Personnel, by S. A. Tucker, Feb 16 p 103
Making Labor Contracts Work, by G. J. McManus, Mar 23 p 49
Report Promotes Engineers' Role, Jan 26 p 49

See also Labor

Instruments

Conveyor Lines Speed Assembly of Precision Instruments, Apr 6 p 108
Design Rotors for Balancing to Extend Machinery Life, by G. C. Lawrie, Jan 26 p 78
Instrument Sales Increase Due, Jan 5 p 166
Instrument Sales on the Way Up, by K. W. Bennett, Jan 26 p 45
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Nuclear Device Keeps Tabs on Blast Furnace Burden, Apr 20 p 134
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49
System Gages Complex Parts, June 29 p 72
Tape-Controlled Mill Checked Quickly With New Recorder, Apr 27 p 112

Insulation

How to Improve Heat Efficiency in Your Insulation System, Apr 20 p 136

Insurance

Annual Embezzlements Soar, by B. F. Surer, Apr 27 p 72
U. S. May Insure New Tool Loans, by R. W. Crosby, June 29 p 41
What's Ahead for U. S. Exports? By K. W. Bennett, Mar 16 p 81

International Business Machines Corp.:

Computers: Supersonic Market, by R. R. Kay, May 25 p 88
Comptuers Talk Shop Language, June 22 p 127
New Tool Steel Uses Tungsten to Lubricate Forming Punch, June 15 p 106

International Nickel Co.:

New Nickel Source in Production, Apr 6 p 152
Stainless Steels Gain Strength, May 18 p 138

Inventories

Are Communications a Headache in Your Management Program? By C. L. Reno, Jan 19 p 86
Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
Computer Adds Efficiency to Inventory Control, Apr 13 p 94
Cost Improvement Gains Grow, Mar 9 p 120
New Cars Back up on Dealers; Automakers Fight '58 Trend, by A. E. Fleming, Feb 23 p 63
New LIFO Regulation Can Mean Tax Break, Mar 23 p 50
"Use With Caution" Is Advice in Using Inventory Figures, by J. D. Baxter, Jan 12 p 36
Will Warehouse Pickup Last? By K. W. Bennett, Jan 26 p 46

Ipsen Industries, Inc.:

Production Eyes New Furnace for Vacuum Heat Treating, Jan 19 p 84

Iron, see Ore, Ferrous

Iron Ore Co. of Canada:

Iron Ore Work Booms in Canada, by Tom Campbell, Mar 9 p 62

Italy

Labor Shortage: No Letup in Sight, by E. C. Beaudet, June 1 p 38

J

Japan

Copper: Higher Prices Coming? May 4 p 55
How to Do Business in Japan, by Tom Campbell Mar 23 p 59
Japan Fights Raw Materials Gap, by Tom Campbell, Apr 6 p 72
Japan Must Export to Survive, by Tom Campbell, Apr 20 p 108
Japan Sets Steel Goals for 1970, by Tom Campbell, Apr 13 p 87
Japanese Need More U. S. Copper Scrap, June 22 p 180
Japanese Ships Invade Seaway, by K. W. Bennett, June 22 p 94
Labor and Unions in Japan, by Tom Campbell, Mar 30 p 74

Joining

Adhesive Bonding of Metals: What Are Design Factors? June 15 p 110
Aerospace Hunts New Metals, by R. R. Kay, Apr 27 p 91
How Explosives Weld Metals, May 4 p 83
Seam Welder Joins Strip Quickly, June 1 p 78

K

Kaiser Aluminum & Chemical Corp.:

Aluminum for Car Wheels? By A. E. Fleming, May 4 p 71
Aluminum Ties in With Fabricators, Mar 2 p 138
Government Blocks Aluminum Mergers, May 4 p 130
Two Passes Weld Heavy Plate, Feb 9 p 120

Kaiser Steel Corp.:

Computer Solves Layout Problem, Mar 30 p 110
How Will Kaiser Plan Fare? By R. R. Kay, Jan 26 p 59
Strip Mill Applies Simulator to Guide Tinplating Line, Mar 16 p 114

Kelsey-Hayes Co.:

Aluminum for Car Wheels? By A. E. Fleming, May 4 p 71

Kelvinator Co.:

Electro-Spray Paints Odd Sizes, May 18 p 141

Kennedy, Robert F.

Justice Department Policies on Merger Laws, by E. C. Beaudet, Apr 13 p 68

Kettenwerke Schlieper G.m.b.H.:

Plastic Chain Makes Its Bid, Apr 20 p 132

Kolene Corp.:

Salt Bath Promises Low Alloys New Horizons in Design, June 1 p 68

L

Labor

Auto Strike Hinges on Sales, by A. E. Fleming, Feb 9 p 80
Employee Training Job Grows, May 18 p 108
Government Urged to Keep Out of Future Steel Strikes, by R. W. Crosby, Jan 19 p 45
House Automation Hearings: Short Workweek Sounding Board, by H. R. Neal, Mar 16 p 79
How to Retain Skilled Workers, by C. V. D. Rousseau, Mar 23 p 75
Management Hunt Under Way, by K. W. Bennett, Feb 23 p 65
More and Better Trade Schools Needed to Boost Skills, Jobs, by P. J. Cathey, Apr 6 p 65
Should the Public Take Part in Labor Disputes? Interview with Dr. George W. Taylor, Mar 16 p 90
UAW Draws Bargaining Plans, by A. E. Fleming, May 4 p 58
USWA Lanuches All-Out Drive to Organize S. Ohio Workers, by T. M. Rohan, May 4 p 55
Will Report Bring Changes? By Tom Campbell, Jan 19 p 46

See also Industrial Relations

Labor, Foreign

Labor and Unions in Japan, by Tom Campbell, Mar 30 p 74
Labor Shortage: No Letup in Sight, by E. C. Beaudet, June 1 p 38

Labor, Productivity

How to Boost the Efficiency of Supervisory Personnel, by S. A. Tucker, Feb 16 p 103

Labor, Wages

Engineers' Salaries Keep Moving Up, Feb 16 p 77
Ford Says Hold Labor Cost Line, by A. E. Fleming, Mar 16 p 95
How Will Kaiser Plan Fare? By R. R. Kay, Jan 26 p 59
Labor Costs Force Automation, by R. H. Eshelman, May 11 p 95

Laconia Malleable Iron Co.:

Shell Coring Castings Grow, June 8 p 120

Lance, see Oxygen

Laos

Strong U. S. Stand Urged in Laos, by Tom Campbell, Mar 30 p 72

Lead

Ahead for Lead: Era of Growth, by F. J. Starin, Mar 2 p 62
Lead and Zinc Outlook Brightens, May 11 p 83

Learner Co.:

Lift Truck Speeds Reclamation of Scrap-Aluminum Aircraft, Mar 23 p 86

Leasing

Industrial Trucks Add Features, Mar 16 p 162

Leeds & Northrup Co.:

Conveyor Lines Speed Assembly of Precision Instruments, Apr 6 p 108

Legislation

Antitrust: Even Tougher in '61, Jan 12 p 11
Are Price Controls Coming? By R. W. Crosby, Feb 9 p 84
Congress Probes Auto Safety, by A. E. Fleming, Apr 6 p 87
Depressed Area Aid Set for Fast Action, by R. W. Crosby, Jan 12 p 35
Everyone Raps Tax Credit Plan, by R. W. Crosby, May 25 p 71
Export Credit Overhaul, by R. W. Crosby, Mar 9 p 57
House Automation Hearings: Short Workweek Sounding Board, by H. R. Neal, Mar 16 p 79
Joint Antitrust Move Underway, by R. W. Crosby, Mar 30 p 73
Justice Department Policies on Merger Laws, by E. C. Beaudet, Apr 13 p 68
Kennedy Faces a Hornet's Nest, by R. W. Crosby, Jan 5 p 91
Military Procurement Practices: Target of Three-Pronged Attack, by R. W. Crosby, Feb 16 p 73
Oxygen Spurs Move to Smoke Control, by T. M. Rohan, Apr 20 p 107
Patent Hearings Flash Warnings: Industry's "Rights" at Stake, by R. W. Crosby, June 15 p 73
Tax Reform Due for Rough Ride, by R. W. Crosby, Apr 27 p 69

Leonetti Enterprises

Easy-to-Apply Resin Coatings Block Corrosive Attacks, Apr 13 p 92

Libraries, see Science & Research

The Lincoln Electric Co.:

Switch to Semiautomatic Welding Speeds Railcar Assmebly Work, by M. H. Waggener, May 25 p 113

Livernash, E. Robert

Will Report Bring Changes? By Tom Campbell, Jan 19 p 46

Lockheed Aircraft Corp.:

Aerospace Hunts New Metals, by R. R. Kay, Apr 27 p 91

Lubrication

Fresh Approach in Machining Takes Aim on Hard Steels, by R. H. Eshelman, Apr 27 p 101
New Bearings Free of Friction, Apr 13 p 97
New Oils Lick Rust Problem, by W. N. Redstreake, June 8 p 92
New Tool Steel Uses Tungsten to Lubricate Forming Punch, June 15 p 106

Lukens Steel Co.:

Argon Flush: Key to Fabrication of Titanium-Clad Steel, by C. L. Kobrin, Apr 27 p 110
Cost Improvement Gains Grow, Mar 9 p 120

Lundquist Tool & Mfg. Co.:

Force-Fit Problems Fade Away With New Unground Bearings, by W. N. Redstreake, Mar 9 p 90

Luria Brothers & Co.:

FTC Scrap Ruling Hits Luria Brothers, Apr 20 p 110

M

Machinability

Aluminum in Stainless Alloy Improves Machinability, Mar 16 p 118
Can Hot Machining Techniques Keep Pace With New Alloys? Mar 2 p 98
Ductile Vanadium Techniques That Make Fabrication Easier, by T. W. Merrill, Feb 9 p 110
Fresh Approach in Machining Takes Aim on Hard Steels, by R. H. Eshelman, Apr 27 p 101
New Powder-Metallurgy Process Makes Parts in Vacuum, by R. H. Eshelman, May 25 p 101

Machine Tool Industry

Builder Backs Trade With Reds, by R. H. Eshelman, Apr 6 p 91
Builders Forge Own Recovery, by R. H. Eshelman, May 25 p 91
Builders Score High Wage Costs, Jan 5 p 174
England Is Going Automatic, by R. H. Eshelman, Jan 19 p 65
Industry Outlook Brightens, by R. H. Eshelman, Feb 9 p 95
Is Tool Production Faltering? By R. H. Eshelman, Apr 20 p 119
New Orders Stumble in January, by R. H. Eshelman, Mar 9 p 75
Orders Keyed to Tax Reform, by R. H. Eshelman, Feb 2 p 73
Shows Prove Business Is Better, June 1 p 42
Toolmen Offer Tax Change Plan, by R. H. Eshelman, June 1 p 55
Tool Orders Are Picking Up, by R. H. Eshelman, May 4 p. 75
Tool Order Upturn Fails to Show, by R. H. Eshelman, June 29 p 61
Tool Plants Run at Half Speed, by R. H. Eshelman, Jan 5 p 109
U. S. Names Grow at Hanover Fair, by E. C. Beaudet, May 11 p 78
U. S. Slips in Tool Export Race, May 11 p 81

Machine Tools

Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
Computers: A Production Cure? By R. H. Eshelman, June 15 p 93
Computers Talk Shop Language, June 22 p 127
Democracy Needs Top Tooling, by R. H. Eshelman, June 22 p 105
Hand Assembly: Does It Pay? By R. H. Eshelman, Apr 27 p 93
Heat Treating Goes Automatic, by R. H. Eshelman, June 8 p 79
Industrial Expansion, Exports Stretch Out Tool Backlog, by E. C. Beaudet, June 8 p 64
Materials Engineering Raises Machine Tool Performance, by R. H. Eshelman, Mar 9 p 96
New Tool Concepts Are Needed, by R. H. Eshelman, May 18 p 125
One-Machine Shop Speeds Work, by R. H. Eshelman, Feb 23 p 83
Pleas for Tool Plan Get Mixed Reaction, by R. H. Eshelman,

June 8 p 67
Precision Rules Space Tooling, by R. H. Eshelman, Feb 16 p 93
Tool Bank Idea Gets New Life, by R. H. Eshelman, Mar 23 p 67
Tool Bank Plan Is Under Attack, by B. F. Surer, May 25 p 73
U. S. May Insure New Tool Loans, by R. W. Crosby, June 29 p 41

See Also Automation; Electronic Devices & Controls

Machine Tools, Boring

TV Camera Can Cut Tool Costs, by R. H. Eshelman, Mar 16 p 99

Machine Tools, Broaching

Broaches Yield Tight Finishes, Jan 12 p 65

Machine Tools, Cutting

High-Speed Machining Triggers Output of Nonferrous Parts, May 4 p 95

Machine Tools, Drilling

System Automates All Handling of Big Structural Assemblies, by R. H. Eshelman, Jan 19 p 75
Tricks of the Trade Pay Off in Machining Stainless, by G. J. Stevens, Apr 20 p 140

Machine Tools, Gear Cutting & Finishing

Man-Machine Teamwork Closer, by R. H. Eshelman, Mar 30 p 95

Machine Tools, Lathe

New Methods Pace Tool Design, by Horace Frommelt, Feb 9 p 118

Machine Tools, Milling

Cutter Mill Speeds Piston Flow, Feb 2 p 91
Hand Mill Paces Terminal Job, Mar 16 p 113
Tape-Controlled Mill Checked Quickly With New Recorder, Apr 27 p 112

Machinery

Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
Design Rotors for Balancing to Extend Machinery Life, by G. C. Lawrie, Jan 26 p 78
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Machine Steps up Paint Mileage, by E. A. Zahn, Mar 16 p 116
Quench Side Rails for Hardness, Apr 27 p 109
Robot Handles Forging Job, Mar 2 p 96
Shaver Skins Rod Quickly, June 15 p 113
Short-Term Outlook Is Bright, by J. D. Baxter, May 25 p 80
Shrink Fittings Speed Assembly of Diecast Rotors on Shafts, Mar 2 p 90
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49
Vectors Define Casting Flaws, June 29 p 70
Vending Hits the Jackpot, by G. J. McManus, June 29 p 40
Vibratory Finishing the Key to Smoother Surfaces, by W. E. Brandt, May 18 p 135
We're Being Financed Out of World Markets, by G. F. Sullivan, Mar 2 p 63

Machinery, Agricultural

Farm Equipment Sales May Rise, by K. W. Bennett, Jan 5 p 96
Farm Tool Outlook Strengthens, by K. W. Bennett, June 15 p 78

Machinery, Bending & Forming

Gas Powers Metalforming Giant, June 29 p 74

Machinery, Gear Cutting & Finishing

Dynamic Honing Rids Trouble in Hydraulic Fluid Lines, by C. A. Balman, May 25 p 108

Machinery, Presses

Automated Press Widens Forging, by T. M. Rohan, Apr 13 p 64
Automated System Forges Parts Without Any Operator Effort, May 11 p 116
Big Squeeze Is Put on Metals Research, by K. W. Bennett, June 29 p 38
Cold Extrusions Forge Ahead, June 15 p 103
Cold Impact Alters Grain Flow to Boost Socket Strength, June 22 p 130
Conveyors Link Forging Line, by R. H. Eshelman, May 4 p 90
Drill Presses Need Power Feed, June 29 p 76
Giant Press Lifts Size Limits of Closed Die Forgings, Jan 12 p 66
How to Prolong Press Tool Life, Jan 26 p 81
New Tool Steel Uses Tungsten to Lubricate Forming Punch, June 15 p 106
Press Builders Boost Sales, Jan 12 p 88
World Press Market Stays Strong, Jan 5 p 98

Machining

Aerospace Hunts New Metals, by R. R. Kay, Apr 27 p 91
Can Hot Machining Techniques Keep Pace With New Alloys? Mar 2 p 98
Chipbreaker Extends Tool Life, Feb 9 p 117
Computers Talk Shop Language, June 22 p 127
Does a Transfer Line Pay Off? By Elmer Zarnke, June 8 p 96
Fast Spin in Cob-Meal Mixture Removes Machining Marks, Jan 12 p 60
Forecast Scrap Losses in Machining, Feb 16 p 116
Fresh Approach in Machining Takes Aim on Hard Steels, by R. H. Eshelman,, Apr 27 p 101
Hand Mill Paces Terminal Job, Mar 16 p 113
High-Speed Machining Triggers Output of Nonferrous Parts, May 4 p 94
How to Plan Production Runs With Precision in Mind, by W. N. Redstreake, May 11 p 105
Immersion Tests Reduce Waste, Apr 6 p 112
Integrated Tools Shape Shafts, by H. E. Benn, Feb 2 p 92
Metcut Provides Machining Data, by R. H. Eshelman, Jan 12 p 49
New Methods Pace Tool Design, by Horace Frommelt, Feb 9 p 118
Reversing of Heat-Treat Cycle Trims Machining Costs, by W. J. Lavigne, Feb 9 p 114
Step-by-Step Controls Pay Off in Machining Hi-Temp Alloys, May 18 p 142
Sulphur Aids Copper Machining, by E. E. Frisk, Jan 26 p 74
TV Camera Can Cut Tool Costs, by R. H. Eshelman, Mar 16 p 99
Tricks of the Trade Pay Off in Machining Stainless, by G. J. Stevens, Apr 20 p 140
Vibratory Finishing the Key to Smoother Surfaces, by W. E. Brandt, May 18 p 135

Magnaflux Corp.:

Vectors Define Casting Flaws, June 29 p 70

Magnesium

Autos to Use More Magnesium, Jan 19 p 61
Galvanized Panels Improved by Magnesium Additions, June 8 p 100
Price Policy Lures Mg Users, by F. J. Starin, Feb 2 p 58

Magnets

Bell Labs Boost Magnet Potential, Feb 16 p 81
Magnets Space Sheets at Press, Feb 2 p 94

R. C. Mahon Company:

System Automates All Handling of Big Structural Assemblies, by R. H. Eshelman, Jan 19 p 75

Maintenance

Chipbreaker Extends Tool Life, Feb 9 p 117
Defense Buying Changes Asked, by J. D. Baxter, Jan 19 p 48
Design Rotors for Balancing to Extend Machinery Life, by G. C. Lawrie, Jan 26 p 78
Engineers Come to Grips with Weld Distortion, Feb 23 p 104
How to Prolong Press Tool Life, Jan 26 p 81
How to Repair Broken Gears, by Federico Strasser, Feb 2 p 86
Maintenance Costs Can Be Cut, by K. W. Bennett, Feb 2 p 56
New Crane Has "Walk-In" Girder, May 4 p 96
Plant Repairs Get Fast Action With Data-Processing Method, by W. J. Smith, May 4 p 86

Management

Annual Embezzlements Soar, by B. F. Surer, Apr 27 p 72
Appliances Try for a Recovery, by K. W. Bennett, Feb 16 p 76
Are Communications a Headache in Your Management Program? By C. L. Reno, Jan 19 p 86
Are Computers Taking Over Management's Functions? By G. J. McManus, Mar 30 p 69
Avoid the Short-Term Freeze, Feb 16 p 87
Builders Forge Own Recovery, by R. H. Eshelman, May 25 p 91
Choosing a New Business Site? June 29 p 47
Computer Adds Efficiency to Inventory Control, Apr 13 p 94
Corporate R & D: Facelifting Due, by K. W. Bennett, Mar 9 p 59
Costs "Creep" in Make-or-Buy, Apr 20 p 113
Cost Improvement Gains Grow, Mar 9 p 120
Does Research Go Far Enough? Apr 6 p 68
Economists Are Good Managers, June 22 p 99
FTC Set to Speed Enforcement, by E. C. Beaudet, May 4 p 67
Financing a Small Business, May 25 p 85
Good Communications Are Vital, Feb 9 p 89
How Aircraft Makers Diversify, by R. R. Kay, Jan 19 p 63
How Managers Control Quality, June 15 p 87
How Quick Reaction Capability Speeds Product Development, by K. W. Bennett, June 1 p 47
How to Boost the Efficiency of Supervisory Personnel, by S. A. Tucker, Feb 16 p 103
How to Reduce Research Costs, Jan 19 p 51
How to Retain Skilled Workers, by C. V. D. Rousseau, Mar 23 p 75
How to Spot Executive Talent, Jan 12 p 43
How to Survey Employees, June 8 p 73
How to Use "Steel Consumption" in Your Market Planning, Jan 5 p 207
Idea Production: What to Do, What to Avoid, Feb 23 p 67
Industry's Decision Makers Say the Worst Is Over, But—, Apr 20 p 101
Internal Audit Draws Interest, Mar 30 p 148
Justice Department Policies on Merger Laws, by E. C. Beaudet, Apr 13 p 68
Line Managers Are the Key Men in Developing New Executives, by Moorhead Wright, Mar 2 p 71
Management Hunt Under Way, by K. W. Bennett, Feb 23 p 65
More Efficient Control Needed, May 18 p 119
New Ideas Cut Buying Costs, by T. M. Rohan, Feb 23 p 66
Not to Spend May Be Costly, Apr 6 p 85
Plan Technical Advances—Now, May 25 p 85
Plant Repairs Get Fast Action With Data-Processing Method, by W. J. Smith, May 4 p 86
Progressive Automation: A Way to Fight Foreign Competition, by G. W. Jernstedt, Apr 20 p 129
R & D Outlays Hit New Peak, by K. W. Bennett, Jan 5 p 94
Seven Ways to Get Efficiency from Materials Handling, June 29 p 67
Should the Public Take Part in Labor Disputes? Interview with Dr. George W. Taylor, Mar 16 p 90
Small Business Meets Change, Mar 16 p 89
Survey Report: What Metalworking Executives Forecast for 1961, Jan 5 p 121
Westinghouse Acts, Apr 13 p 63
What Managers Must Avoid, June 1 p 45

Manganese

Quench Side Rails for Hardness, Apr 27 p 109

Marketing

Adhesive Education Needed, Feb 9 p 150
Aluminum Ties in With Fabricators, Mar 2 p 138
Better Package; Bigger Profits, by K. W. Bennett, Apr 20 p 106
Builders Forge Own Recovery, by R. H. Eshelman, May 25 p 91
Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
California Needs More Customers, by R. R. Kay, June 8 p 77
Consumer-Price Index Will Get Face-Lifting, Feb 23 p 71
Distributors Face Competition, Jan 19 p 112
How Consumers View Recession, Jan 19 p 59
How to Use Appropriations Data in Sales Forecasting, Mar 30 p 83
How to Use "Steel Consumption" in Your Market Planning, Jan 5 p 207
Industry Reels Under Buffeting by Winter's Icy Blasts, Feb 9 p 77
Marketers: Stay Alert, or Else, Jan 26 p 55
Motor Market Is Now Forming, June 1 p 104
New Cars Back up on Dealers; Automakers Fight '58 Trend, by A. E. Fleming, Feb 23 p 63
Purchasers Evaluate Salesman, May 4 p 122
Recession That Wasn't There Should Fade in Early Fall, by Tom Campbell, Jan 5 p 89
Sales Facts Should Be Heard, Mar 23 p 116
Service Centers Push Marketing, by G. F. Sullivan, May 25 p 79
Steel Research Keeps Customers, by G. J. McManus, Jan 26 p 48
Survey Report: What Metalworking Executives Forecast for 1961, Jan 5 p 121
"Use With Caution" Is Advice in Using Inventory Figures, by J. D. Baxter, Jan 12 p 36
Vending Hits the Jackpot, by G. J. McManus, June 29 p 40
Weather Warms Up Car Market, by A. E. Fleming, May 25 p 74
What Changes Buying Patterns? Mar 2 p 69
What's Next for Steel Prices? By Tom Campbell, June 22 p 88
What New-Car Buyers Want, Feb 9 p 91

What Stainless Price Cuts Mean, by G. J. McManus, June 8 p 62

Martin & Tucker

How to Boost the Efficiency of Supervisory Personnel, by S. A. Tucker, Feb 16 p 103

Material Handling

Automatic Assembly Isn't Dead, Mar 2 p 79
Automated System Forges Parts Without Any Operator Effort, May 11 p 116
Automated Torches Cut Billets, by Richard Bechtle, Feb 16 P 114
Conveyor Lines Speed Assembly of Precision Instruments, Apr 6 p 108
Conveyors Link Forging Line, by R. H. Eshelman, May 4 p 90
Dust Conditioner Aids Handling, Mar 23 p 88
Efficient Monorail System Absorbs Finishing Line, by J. K. Harlow, Jan 12 p 62
Electro-Spray Paints Odd Sizes, May 18 p 141
Hand Assembly: Does It Pay? By R. H. Eshelman, Apr 27 p 93
Handling Cost: It Can Be Cut, May 18 p 109
Hoppers Aid Foundry's Moves, Apr 13 p 100
How Radomes and Nose Cones Are Handled With Care, May 25 p 111
How to Step Up the Efficiency of Assembly Line Operations, June 8 p 89
Industrial Trucks Add Features, Mar 16 p 162
Industrial Truck Prices Soft, Jan 5 p 158
Integrated Tools Shape Shafts, by H. E. Benn, Feb 2 p 92
Lift Truck Speeds Reclamation of Scrap-Aluminum Aircraft, Mar 23 p 86
Lift Trucks Handle Odd Jobs, June 1 p 75
Magnets Space Sheets at Press, Feb 2 p 94
New Crane Has "Walk-In" Girder, May 4 p 96
Outlook for Conveyors: Stability, Feb 23 p 130
Sales and Costs Will Rise, Jan 5 p 132
Seven Ways to Get Efficiency from Materials Handling, June 29 p 67
System Automates All Handling of Big Structural Assemblies, by R. H. Eshelman, Jan 19 p 75

Materials

Aerospace Hunts New Metals, by R. R. Kay, Apr 27 p 91
Glass Helps Metals to Raise High-Temperature Barriers, Jan 12 p 57
How Space-Age Energy Sources Spark Rise of New Materials, by R. M. Treco, Mar 2 p 87
Industrial Horizon Widens for the Newer Plastics, Feb 23 p 93
Materials for the Future, by C. L. Kobrin, June 22 p 115
New Alumina Shapes Hard Steel. Washes Molds, Improves Paint, May 18 p 144
New Heat-Treatable Carbides Offer Job Versatility, by J. L. Ellis, Mar 2 p 92
New Uses, Price Spur Plastics Push, June 15 p 75

McLouth Steel Corp.:

Automakers Preview the Future, by A. E. Fleming, Jan 19 p 50

Adolf Messer (Germany)

Automated Torches Cut Billets, by Richard Bechtle, Feb 16 p 114

Metallurgy

Big Squeeze Is Put on Metals Research, by K. W. Bennett, June 29 p 38
Can Copper Alloys Hold the Line at Ultralow Temperatures? By C. L. Bulow, Mar 9 p 92
Can Uranium Improve Steel? By S. I. Gertsman, Apr 6 p 110
Guard Against Fatigue Failures, by J. B. Barriage, Feb 16 p 111
Is Red Chinese Metallurgy Taking a "Leap Forward"? By C. L. Kobrin, Mar 23 p 82
Materials for the Future, by C. L. Kobrin, June 22 p 115
Stainless Steels Gain Strength, May 18 p 138
Tailored Alloys Help to Solve Investment-Casting Problems, by R. H. Eshelman, May 11 p 114

Metalworking Industry

Aerospace Spotlighted at Show, by R. R. Kay, Mar 30 p 93
Democracy Needs Top Tooling, by R. H. Eshelman, June 22 p 105
Future Shortage of Engineers Starts on Campuses Now, by J. D. Baxter, June 22 p 85
How to Use "Steel Consumption" in Your Market Planning, Jan 5 p 207
Industry's Decision Makers Say the Worst Is Over, But—, Apr 20 p 101
Materials for the Future, by C. L. Kobrin, June 22 p 115
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Metalworking Market Widens, by R. R. Kay, June 1 p 53
New Markets Help Aluminum, by F. J. Starin, Jan 5 p 95
1961 Meetings and Conventions, Jan 5 p 240
Seven Ways to Get Efficiency from Materials Handling, June 29 p 67
Small Business Makes Big Gains: Forges Even Brighter Future: by K. W. Bennett, June 8 p 59
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49
Survey Report: What Metalworking Executives Forecast for 1961, Jan 5 p 121
Toymakers up Tooling Outlays, by K. W. Bennett, Mar 2 p 64
USWA Launches All-Out Drive to Organize S. Ohio Workers, by T. M. Rohan, May 4 p 55
West Building Boom Continues, by R. R. Kay, Feb 16 p 91

See also Patents

Metcut Research Associates, Inc.:

Fresh Approach in Machining Takes Aim on Hard Steels, by R. H. Eshelman, Apr 27 p 101
Metcut Provides Machining Data, by R. H. Eshelman, Jan 12 p 49

Mexico

Continuous Casting Faces Test, by G. J. McManus, May 18 p 110

Milling

Hand Mill Paces Terminal Job, Mar 16 p 113

Minerals

Alaska's Mines Are Weakening, by R. R. Kay, Mar 23 p 64

Miniaturization

Bearing Simulator Plots Design, May 4 p 93
Cold Joint Problems Disappear on Automated Soldering Line, by R. H. Eshelman, Jan 26 p 69

Minnesota Mining & Mfg. Co.:

Mechanical Plating: A Solution to Hydrogen Embrittlement? Mar 30 p 107

Missiles, see Aerospace

Molding, Molds

Fluid Mold Aids Forging Finish, Mar 30 p 111
New Alumina Shapes Hard Steel, Washes Molds, Improves Paint, May 18 p 144
Reclaimable Composite Molds Automate Casting Lines, June 15 p 108

Monogram Models, Inc.:

Toymakers up Tooling Outlays, by K. W. Bennett, Mar 2 p 64

Monorail, see Transportation Equipment

The Morris Machine Co.:

Cutter Mill Speeds Piston Flow, Feb 2 p 91

Motors

Costs Will Climb, Prices Drop, Jan 5 p 140
Motor Market Is Now Forming, June 1 p 104

N

National Broach & Machine Co.:

End White-Layer Problems on Nitrided Parts, by R. F. Erxleben, May 25 p 106

National Cash Register Co.:

USWA Launches All-Out Drive to Organize S. Ohio Workers, by T. M. Rohan, May 4 p 55

National Industrial Conference Board

How to Survey Employees, June 8 p 73
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49

National Lead Co.:

Production Setups Extend Scope of Diecast Aluminum Engines, by R. H. Eshelman, Mar 16 p 120

National Steel Corp.:

National Steel Corp. Gets New Team, Mar 2 p 61

Newman Foundry Co.:

Hoppers Aid Foundry's Moves, Apr 13 p 100

Nickel

New Nickel Source in Production, Apr 6 p 152
New World Markets Give Nickel a Lift, Jan 5 p 280
Stainless Steels Gain Strength, May 18 p 138

Nitriding

End White-Layer Problems on Nitrided Parts, by R. F. Erxleben, May 25 p 106

See also Steel, Treatment

Nonferrous Metals

Ahead for Lead: Era of Growth, by F. J. Starin, Mar 2 p 62
Automakers Preview Metals Outlook, Mar 23 p 48
Beryllium Supply Is Assured, June 29 p 37
Can Nonferrous Prices Hold Up Under New Price Pressures? By F. J. Starin, Jan 26 p 43
Copper Fights Cost Problems, by A. E. Fleming, Mar 23 p 63
Glass Helps Metals to Raise High-Temperature Barriers, Jan 12 p 57
Lead and Zinc Outlook Brightens, May 11 p 83
Nonferrous Prices, Jan 5 p 229
Tin Shortage Is a Possibility, Feb 16 p 138
Welding Meets Challenge of Space Age Metals, by R. R. Irving, Apr 6 p 99

See also individual Nonferrous Metals

Nonferrous Metals, Bending & Forming

Complex Rotors Cast to Shape, May 11 p 113
Ductile Vanadium Techniques That Make Fabrication Easier, by T. W. Merrill, Feb 9 p 110
Electrospark Forming: New Way to Shape Hard-to-Form Metals, Feb 23 p 98
High-Speed Machining Triggers Output of Nonferrous Parts, May 4 p 95
Step-by-Step Controls Pay Off in Machining Hi-Temp Alloys, May 18 p 142

Nordhoff, Prof. Heinz:

VW's Nordhoff on World Trade, by E. C. Beaudet, May 25 p 76

Nose Cones, see Aerospace

Nucleonics, see Atomic Energy

O

Odiorne, George S.:

Tax Favors for Training Costs? May 11 p 89

Olin Mathieson Chemical Corp.:

How Space-Age Energy Sources Spark Rise of New Materials, by R. M. Treco, Mar 2 p 87
New Research Cars Highlight Aluminum, Apr 6 p 87

Onsrud Machine Works, Inc.:

High-Speed Machining Triggers Output of Nonferrous Parts, May 4 p 95

Opinion Research Corp.:

Are Employees Discontented? Feb 16 p 87

Ore, Beneficiation

U. S. Sinter Experts Needed Overseas, Feb 9 p 83

Ore, Ferrous

Alaska's Mines Are Weakening, by R. R. Kay, Mar 23 p 64
Demand Lags for Lakes Iron Ore, by T. M. Rohan, May 11 p 77
Iron Ore, Prices, Jan 5 p 234
Iron Ore Work Booms in Canada, by Tom Campbell, Mar 9 p 62
U. S. Ore Falls Before Imports, by T. M. Rohan, Jan 12 p 38

Ore, Treatment

Semi-Taconite Test, Mar 16 p 84

Otis Elevator Co.:

How Radomes and Nose Cones Are Handled With Care, May 25 p 111

Owens-Corning Fiberglas

Glass Helps Metals to Raise High-Temperature Barriers, Jan 12 p 57

Oxygen

Cleaner Chrome Boon to Melters, June 15 p 116
Infrared Film Helps Design a Better Oxygen Lance, Mar 23 p 80
Kaldo Process Makes U. S. Debut, by G. J. McManus, Apr 20 p 104
Oxygen Mills Face Smoke Crisis, Feb 2 p 57
Oxygen Spurs Move to Smoke Control, by T. M. Rohan, Apr 20 p 107
Russians Alter Blast Furnaces to Improve Oxygen Injection, Apr 13 p 98

See also Steelmaking

P

Packaging

Aluminum, Thin Tinplate Battle for Frozen Citrus Market, by G. J. McManus, June 29 p 35
Better Package: Bigger Profits, by K. W. Bennett, Apr 20 p 106
Welded Tubes Wind Foil Evenly, June 22 p 132

See also Containers

Paints & Painting

Easy-to-Apply Resin Coatings Block Corrosive Attacks, Apr 13 p 92
Electro-Spray Paints Odd Sizes, May 18 p 141
Machine Steps up Paint Mileage, by E. A. Zahn, Mar 16 p 116
New Alumina Shapes Hard Steel, Washes Molds, Improves Paint, May 18 p 144
System Automates All Handling of Big Structural Assemblies, by R. H. Eshelman, Jan 19 p 75

Pangborn Corp.:

Vibratory Finishing the Key to Smoother Surfaces, by W. E. Brandt, May 18 p 135

Paperwork

Plan for Merged Automation, Apr 27 p 87

Patents

New Patents in Metalworking, Jan 12 p 76, Jan 19 p 90, Jan 26 p 103, Feb 2 p 110, Feb 9 p 122, Feb 16 p 118, Feb 23 p 108, Mar 2 p 111, Mar 9 p 100, Mar 16 p 133, Mar 23 p 90, Mar 30 p 118, Apr 6 p 117, Apr 13 p 102, Apr 20 p 145, Apr 27 p 188, May 4 p 98, May 11 p 120, May 18 p 150, May 25 p 116, June 1 p 80, June 8 p 104, June 15 p 121, June 22 p 159, June 29 p 104
Patent Hearings Flash Warnings: Industry's "Rights" at Stake, by R. W. Crosby, June 15 p 73

Patty, Dr. Ernest N.

Alaska's Mines Are Weakening, by R. R. Kay, Mar 23 p 64

Pennsylvania

Processors Fight Sales Tax Levy, by G. J. McManus, Jan 19 p 49

Photography

Infrared Film Helps Design a Better Oxygen Lance, Mar 23 p 80

Pig Iron

Gas Injection for Blast Furnace? By C. L. Kobrin, Feb 9 p 107

Pipe, Tubes

How to Improve Heat Efficiency in Your Insulation System, Apr 20 p 136
Integrated Tools Shape Shafts, by H. E. Benn, Feb 2 p 92
Rock-Forging "Irons" Welds to Give Quality Tubing, by J. A. Seme, Feb 2 p 88
Rotating Unit Welds Pipeline, Mar 9 p 95
Structurals Get a New Shape, June 29 p 39
Welded Titanium Tubing Curbs Corrosive Attacks of Acids, Jan 12 p 68
Welded Tubes Wind Foil Evenly, June 22 p 132

Pittsburgh Coke & Chemical Co.:

Gas Injection for Blast Furnace? By C. L. Kobrin, Feb 9 p 107

Planning, see Management

Plant Equipment

Dust Conditioner Aids Handling, Mar 23 p 88
Job of Office Buyer Grows, Feb 2 p 124
Oxygen Spurs Move to Smoke Control, by T. M. Rohan, Apr 20 p 107
Pumps and Compressors Gain, Apr 6 p 144
Scale Makers Report Gains, May 18 p 184

Plant Layout

Conveyor Lines Speed Assembly of Precision Instruments, Apr 6 p 108

Plant Location

Choosing a New Business Site? June 29 p 47
Making Plant Location Easier, by P. J. Cathey, Feb 16 p 78

Plastics

Delrin Widens Its Market, Feb 16 p 79
Glass Helps Metals to Raise High-Temperature Barriers, Jan 12 p 57
Industrial Horizon Widens for the Newer Plastics, Feb 23 p 93
Materials for the Future, by C. L. Kobrin, June 22 p 115
New Uses, Price Spur Plastics Push, June 15 p 75
Plastic Chain Makes Its Bid, Apr 20 p 132
Plastics Gain Auto Markets, Jan 26 p 57
Plastics Have Designs on Cars, by A. E. Fleming, Feb 23 p 79
Plastics Reach for New Highs, Feb 16 p 79
Strong Plastic Shapes Easily, Mar 2 p 95

Plates, Sheets, Strip

Argon Flush: Key to Fabrication of Titanium-Clad Steel, by C. L. Kobrin, Apr 27 p 110
Automakers Demand Finer Finish, by T. M. Rohan, Apr 6 p 69
Columbium Curbs Wrinkling in Forming Stainless Strip, by C. T. Evans, Jr., Feb 26 p 96
Galvanized Sheet Market Grows, by G. J. McManus, June 1 p 40
New Heat-Treat Lines for Plate Bank on Growing Alloy Markets, by G. J. McManus, Mar 9 p 85
Roll-Weld Method Bonds Panels, Apr 27 p 114
Seam Welder Joins Strip Quickly, June 1 p 78
Two Passes Weld Heavy Plate, Feb 9 p 120

Pollution, Air

Heat-Treat and Plating Wastes Go Up in a Puff of Smoke, June 8 p 94
L. A. Smog: It Is Still a Problem, by R. R. Kay, June 22 p 103
Oxygen Mills Face Smoke Crisis, Feb 2 p 57
Oxygen Spurs Move to Smoke Control, by T. M. Rohan, Apr 20 p 107

Pollution, Water

Heat-Treat and Plating Wastes Go Up in a Puff of Smoke, June 8 p 94

Porcelain Enamel

New Uses for Porcelain Enamel? By A. E. Fleming, Apr 13 p 73

Powdered Metals

Metal Powders, Jan 5 p 231
New Alumina Shapes Hard Steel, Washes Molds, Improves Paint, May 18 p 144
New Powder-Metallurgy Process Makes Parts in Vacuum, by R. H. Eshelman, May 25 p 101
New Tool Steel Uses Tungsten to Lubricate Forming Punch, June 15 p 106

Power

Electric Truck Makes Headway, by B. F. Surer, June 8 p 66
Gas Powers Metalforming Giant, June 29 p 74
How Space-Age Energy Sources Spark Rise of New Materials, by R. M. Treco, Mar 2 p 87
More Power at Indianapolis? By R. R. Kay, May 18 p 123
Nuclear Market to Explode—If, by F. J. Starin, Mar 9 p 60

Prenco Mfg. Co.:

Heat-Treat and Plating Wastes Go Up in a Puff of Smoke, June 8 p 94

Presswork

Are All Those Punches Needed? By H. R. Hugo, Jan 19 p 82
Cold Impact Alters Grain Flow to Boost Socket Strength, June 22 p 130
How Creative Stamping Design Can Effect Stock Savings, by Federico Strasser, June 1 p 76
Jet Stream Cuts Die Downtime, Feb 9 p 113
Magnets Space Sheets at Press, Feb 2 p 94
Stampings Get Boost Along Recovery Road, by K. W. Bennett, May 18 p 111
Will Stampers Hold Price Line? Jan 5 p 170

Prices

Aluminum, Thin Tinplate Battle for Frozen Citrus Market, by G. J. McManus, June 22 p 35
Are Price Controls Coming? By R. W. Crosby, Feb 9 p 84
Are Stable Prices Important? Feb 2 p 67
Bearings Prices: A Rise Coming? Apr 20 p 105
Can Nonferrous Prices Hold Up Under New Price Pressures? By F. J. Starin, Jan 26 p 43
Commodity Pricing Hits Steel, by G. J. McManus, May 11 p 75
Commodity Pricing Rapped by Alcoa, Apr 27 p 70
Consumer Price Index Will Get Face-Lift, Feb 23 p 71
Copper-Brass Probe Puzzles Industry, Mar 23 p 122
Copper Fights Cost Problems, by A. E. Fleming, Mar 23 p 63
Copper: Higher Prices Coming? May 4 p 57
FTC Set to Speed Enforcement, by E. C. Beaudet, May 4 p 67
Foreign Car Price Cuts Coming, by A. E. Fleming, Feb 2 p 69
GE Rejects Low Pricing Limit, by G. J. McManus, June 22 p 90
President Urges Spending Boost, by R. W. Crosby, June 1 p 37
Price Fixing (Round II), by G. F. Sullivan, Apr 6 p 67
Prices and Production Data, Jan 5 p 221
Reevaluate the Foreign Prices, Apr 27 p 160
Scrap Exports: Key to Market? Feb 23 p 70
Survey Report: What Metalworking Executives Forecast for 1961, Jan 5 p 121
U. S. Asks: Is Steel Price Rise Needed? By R. W. Crosby, June 8 p 63
Westinghouse Acts, Apr 13 p 63
What's Next for Steel Prices? By Tom Campbell, June 22 p 88
What Stainless Price Cuts Mean, by G. J. McManus, June 8 p 62

Prudential Insurance Co.:

Businessmen Forecast Pickup, by R. R. Kay, Apr 20 p 117

Pumps

Good Planning Precludes Snags in Casting Huge Impellers, Mar 9 p 88
Pumps and Compressors Gain, Apr 6 p 144

Purchasing

Buyer Poll Shows Bright Signs, by G. J. McManus, Mar 9 p 58
Buyer Push for Fast Delivery Blunts Steel Import Sales, by T. M. Rohan, Mar 2 p 59
Cost Improvement Gains Grow, Mar 9 p 120
For Small Plants: Tips on Bids, by K. W. Bennett, Apr 13 p 62
Foundries Await Turning Point, Jan 5 p 272
Internal Audit Draws Interest, Mar 30 p 148
Job of Office Buyer Grows, Feb 2 p 124
Modern Buying Termed a Science, May 25 p 134
Negotiated Buying Cuts Cost, Apr 13 p 138
New Ideas Cut Buying Costs, by T. M. Rohan, Feb 23 p 66
Near-Standard Specials: A Way to Solve Fastener Problems? June 15 p 114
Performance Pressure Increases, Jan 26 p 108
Problem: How Well PA's Do Job, May 11 p 178
Purchasers Evaluate Salesmen, May 4 p 122
PA: More Attention Coming, June 15 p 154
Reevaluate the Foreign Prices, Apr 27 p 160
Sales Facts Should Be Heard, Mar 23 p 116
Should Buyers Look Overseas? June 22 p 172

Purchasing, Government

Defense Buying Changes Asked, by J. D. Baxter, Jan 19 p 48
Defense Contracts Spread More Evenly, Feb 9 p 79
Metal Imports by Navy Stir Up a Storm, Jan 12 p 40
Military Procurement Practices: Target of Three-Pronged Attack, by R. W. Crosby, Feb 16 p 73
Patent Hearings Flash Warnings: Industry's "Rights" at Stake, by R. W. Crosby, June 15 p 73
Pleas for Tool Plan Get Mixed Reaction, by R. H. Eshelman, June 8 p 67
Tool Bank Idea Gets New Life, by R. H. Eshelman, Mar 23 p 67
Tool Bank Plan Is Under Attack, by B. F. Surer, May 25 p 73

Q

Quality Control

How Managers Control Quality, June 15 p 87

Quebec Cartier Mining Co.:
Iron Ore Work Booms in Canada, by Tom Campbell, Mar 9 p 62

R

Racine Hydraulics & Machinery, Inc.:
How to Use Appropriations Data in Sales Forecasting, Mar 30 p 85

Rails
Quench Side Rails for Hardness, Apr 27 p 109

Railroad Equipment
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49
Switch to Semiautomatic Welding Speeds Railcar Assembly Work, by M. H. Waggener, May 25 p 113

Rand Corp.:
Democracy Needs Top Tooling, by R. H. Eshelman, June 22 p 105

Ransburg Electro-Coating Corp.:
Electro-Spray Paints Odd Sizes, May 18 p 141

Raw Materials
Japan Fights Raw Materials Gap, by Tom Campbell, Apr 6 p 72

Reactive Metals, see Nonferrous Metals

Refractories
Welding Meets Challenge of Space Age Metals, by R. R. Irving, Apr 6 p 99

See also Individual Metals

Republic Steel Corp.:
Heat-Treat and Shot-Peen Cycle Cuts Torsional Stresses, June 1 p 70
Nuclear Device Keeps Tabs on Blast Furnace Burden, Apr 20 p 134

Research, see Aerospace; Metallurgy; Science & Research

Reynolds Metals Co.:
Improved Aluminum Offers Lifetime Brightness, by A. L. Moxon & S. B. Wyman, Mar 23 p 78
New Aluminum Use, June 8 p 68

Rockets, see Aerospace

Rockwell Mfg. Co.:
Drill Presses Need Power Feed, June 29 p 76

Rolling Mills
New Mill Hikes Bar Production, Mar 30 p 114
Processors Fight Sales Tax Levy by G. J. McManus, Jan 19 p 49
Strip Mill Applies Simulator to Guide Tinplating Line, Mar 16 p 114

Ronco Laboratories
New Oils Lick Rust Problem, by W. N. Redstreake, June 8 p 92

Elmo Roper & Associates
Why All Don't Answer the Call, June 1 p 45

Russia, see U.S.S.R.

S

Safety
Broaches Yield Tight Finishes, Jan 12 p 65
Congress Probes Auto Safety, by A. E. Fleming, Apr 6 p 87
Dust Conditioner Aids Handling, Mar 23 p 88
Guard Against Fatigue Failures, by J. B. Barriage, Feb 16 p 111
Nuclear Men View Safety Problems, by G. J. McManus, June 15 p 79
Vibratory Finishing Speeds Work on Metals and Plastics, by F. D. Hodges, Jan 26 p 72

See also Pollution, Air

Saffran Engineering Co.:
Welded Titanium Tubing Curbs Corrosive Attack of Acids, Jan 12 p 68

St. Joseph Lead Co.:
Zinc Discounting: Has It Ended? Jan 19 p 118
Zinc Thrown Into Price Confusion, Jan 12 p 94

St. Lawrence Seaway
Japanese Ships Invade Seaway, by K. W. Bennett, June 22 p 94

San Francisco
Bay Area Plans Rapid Transit, by R. R. Kay, Mar 16 p 96

Sangamo Electric Co.:
Vibratory Finishing Speeds Work on Metals and Plastics, by F. D. Hodges, Jan 26 p 72

Sanson & Rowland, Inc.:
Distributors Face Competition, Jan 19 p 112

Science & Research
Aerospace Hunts New Metals, by R. R. Kay, Apr 27 p 91
Automakers Preview the Future, by A. E. Fleming, Jan 19 p 50
Better Days Ahead in Scrap? Jan 19 p 53
Computer Speeds Up Metalworking Data, June 1 p 41
Copper Researches New Products, Jan 26 p 114
Corporate R & D: Facelifting Due, by K. W. Bennett, Mar 9 p 59
Democracy Needs Top Tooling, by R. H. Eshelman, June 22 p 105
Does Research Go Far Enough? Apr 6 p 68
How Explosives Weld Metals, May 4 p 83
How Space-Age Energy Sources Spark Rise of New Materials, by R. M. Treco, Mar 2 p 87
Instrument Sales on the Way Up, by K. W. Bennett, Jan 26 p 45
Intellectronics Era Forecast, by R. R. Kay, June 15 p 91
How to Reduce Research Costs, Jan 19 p 51
Materials for the Future, by C. L. Kobrin, June 22 p 115
Metcut Provides Machining Data, by R. H. Eshelman, Jan 12 p 49
The Moon: How Valuable to Man? By R. R. Kay, June 29 p 59
New Tool Concepts Are Needed, by R. H. Eshelman, May 18 p 125
Patent Hearings Flash Warnings; Industry's "Rights" at Stake, by R. W. Crosby, June 15 p 73
R & D Hit New Peak, by K. W. Bennett, Jan 5 p 94
Research Attacks Seal Leakage, June 1 p 72
Scientist Sees Boost in R & D, by R. R. Kay, Feb 9 p 93
Thermoelectric Comes of Age, by K. W. Bennett, Apr 6 p 70
What's the State of Welding Behind the Iron Curtain? By G. E. Claussen, Feb 2 p 81

Scrap
Better Days Ahead in Scrap? Jan 19 p 53
FTC Scrap Ruling Hits Luria Brothers, Apr 80 p 110
Forecast Scrap Losses in Machining, Feb 16 p 116
Lift Truck Speeds Reclamation of Scrap-Aluminum Aircraft, Mar 23 p 86
Prices, Jan 5 p 236
Scrap Exports: Key to Market? Feb 23 p 70

Sealants
Fluid Mold Aids Forging Finish, Mar 30 p 111
Research Attacks Seal Leakage, June 1 p 72

Security-First National Bank:
Electronics Moves to the Top, by R. R. Kay, Apr 6 p 89

Selas Corp.:
Shrink Fittings Speed Assembly of Diecast Rotors on Shaft, Mar 2 p 90
Unit Couples Heat Treating Steps, Jan 12 p 70

Sellers Injector Corp.:
Jet Stream Cuts Die Downtime, Feb 9 p 113

Sharon Steel Co.:
Kaldo Process Makes U. S. Debut, by G. J. McManus, Apr 20 p 104

Shaw Process, see Casting, Sand

Sheffield Corp.:
System Gages Complex Parts, June 29 p 72

Shipbuilding
Japan Must Export to Survive, by Tom Campbell, Apr 20 p 108
Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49

Silicon
Germanium Gets a Finer Polish, Apr 20 p 139

Sintering
U. S. Sinter Experts Needed Overseas, Feb 9 p 83

SKF Industries, Inc.:
Bearings Prices: A Rise Coming? Apr 20 p 105
Economists Are Good Managers, June 22 p 99

A. O. Smith Corp.:
Adhesive Bonding of Metals: What Are Design Factors? June 15 p 110
Purchasers Evaluate Salesmen, May 4 p 122
Quench Side Rails for Hardness, Apr 27 p 109

Smith's Delivery Vehicles, Ltd.:
Electric Truck Makes Headway, by B. F. Surer, June 8 p 66

Snyder Corp.:
Cold-Joint Problems Disappear on Automated Soldering Line, by R. H. Eshelman, Jan 26 p 69

Society of Automotive Engineers
Automakers Preview the Future, by A. E. Fleming, Jan 19 p 50
Body Battle Flares in Detroit, by A. E. Fleming, Mar 3 p 47

Soldering
Cold-Joint Problems Disappear on Automated Soldering Line, by R. H. Eshelman, Jan 26 p 69
Soldering Lines Go Automatic, June 1 p 65

Spacecraft, see Aerospace

Sperry Gyroscope Co.:
Bearing Simulator Plots Design, May 4 p 93

Stainless Steel
Aluminum in Stainless Alloy Improves Machinability, Mar 16 p 118
Bright Annealed Demand Rises, by A. E. Fleming, Mar 2 p 75
Cleaner Chrome Boon to Melters, June 15 p 116
Columbium Curbs Wrinkling in Forming Stainless Steel, by C. T. Evans, Jr., Feb 23 p 96
Commodity Pricing Hits Steel, by G. J. McManus, May 11 p 75
Commodity Pricing Rapped by Alcoa, Apr 27 p 70
Ford May Try Stainless Mufflers, Feb 2 p 69
How Automakers Mold Stainless Market, June 15 p 82
New Entry for Autos: Buffed Stainless, June 15 p 89
Stainless Steels Gain Strength, May 18 p 138
Step-by-Step Controls Pay Off in Machining Hi-Temp Alloys, May 18 p 142
Tests Demonstrate Payoff of New Brazing Alloy, by R. C. Kopituk, Apr 13 p 90
Tricks of the Trade Pay Off in Machining Stainless, by G. J. Stevens, Apr 20 p 140
What Stainless Price Cuts Mean, by G. J. McManus, June 8 p 62

Stamping, see Presswork

Standard Pressed Steel Co.:
Hidden Causes of Bolt Failure: "Carb" and "Decarb", Mar 30 p 112
Near-Standard Specials: A Way to Solve Fastener Problems? June 15 p 114

Standards
Are Welding Codes Outdated? By R. Weck, Mar 16 p 109
Automakers Demand Finer Finish, by T. M. Rohan, Apr 6 p 69
Congress Probes Auto Safety, by A. E. Fleming, Apr 6 p 87
Price Edge Favors U. S. Welders, by T. M. Rohan, Apr 27 p 71

Stanford Research Institute
How Explosives Weld Metals, May 4 p 83

Steel

Automakers Preview Metals Outlook, Mar 23 p 48
Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
How to Use "Steel Consumption" in Your Market Planning, Jan 5 p 207
PA: More Attention Coming, June 15 p 154
Steel Distribution by Consuming Industries, Table, Apr 27 p 68

Steel, Bending & Forming

Cold Extrusions Forge Ahead, June 15 p 103
Columbium Curbs Wrinkling in Forming Stainless Steel, by C. T. Evans, Jr., Feb 23 p 96
Electrospark Forming: New Way to Form Hard-to-Form Metals, Feb 23 p 98
Fresh Approach in Machining Takes Aim on Hard Steels, by R. H. Eshelman, Apr 27 p 101
New Alumina Shapes Hard Steel, Washes Molds, Improves Paint, May 18 p 144
Stainless Steels Gain Strength, May 18 p 138

Steel, Treatment

End White-Layer Problems on Nitrided Parts, by R. F. Erxleben, May 25 p 106
Hidden Causes of Bolt Failure: "Carb" and "Decarb", Mar 30 p 112
Salt Bath Promises Low Alloys New Horizons in Design, June 1 p 68

Steel Industry

AISI: Good Times Are Ahead, by Tom Campbell, June 1 p 35
Building Paces Steel Upswing, by R. R. Kay, May 11 p 93
Buyer Push for Fast Delivery Blunts Steel Import Sales, by T. M. Rohan, Mar 2 p 59
Coast Steelmakers Optimistic, by R. R. Kay, Mar 9 p 73
Employee Training Job Grows, May 18 p 108
Farwest Steel Upturn Predicted, Jan 12 p 47
Financial Analysis of the Steel Industry, Jan 5 p 225
Government Urged to Keep Out of Future Steel Strikes, by R. W. Crosby, Jan 19 p 45
Industry's Decision Makers Say the Worst Is Over, But—, Apr 20 p 101
Industry Reels Under Buffeting by Winter's Icy Blasts, Feb 9 p 77
Is Steel Pickup on Target? Apr 13 p 61
Japan Sets Steel Goals for 1970, by Tom Campbell, Apr 13 p 87
Making Plant Location Easier, by P. J. Cathey, Feb 16 p 78
National Steel Corp. Gets New Team, Mar 2 p 61
Planning Shows in Steel Earnings, by R. D. Raddant, Feb 9 p 85
Prices and Production Data, Jan 5 p 221
Recession That Wasn't There Should Fade in Early Fall, by Tom Campbell, Jan 5 p 89
Service Centers Push Marketing, by G. F. Sullivan, May 25 p 79
Short-Term Outlook Is Bright, by J. D. Baxter, May 25 p 80
Steel: Better Profits in '61? By G. J. McManus, Apr 6 p 76
Steel Earnings: A Bleak Quarter, May 4 p 60
Steel Expansion Rate Slows Down, by E. C. Beaudet, June 15 p 80
U. S. Asks: Is Steel Price Rise Needed? By R. W. Crosby, June 8 p 63
Steel Industry: Financial Analysis, Apr 6 Insert following page 76
Steel Puts Reins on Spending; Sales, Cash Flow Slide, by G. J. McManus, Jan 5 p 92
Steel Strikes Back at Imports, by T. M. Rohan, Feb 23 p 68
USWA Launches All-Out Drive to Organize S. Ohio Workers, by T. M. Rohan, May 4 p 55
What's Next for Steel Prices? By Tom Campbell, June 22 p 88
Will Report Bring Changes? By Tom Campbell, Jan 19 p 46
Will Warehouse Pickup Last? By K. W. Bennett, Jan 26 p 46

Steelmaking

Argon Teeming: Extra Refinement to Vacuum Degassing of Steel, May 18 p 146
D-H Process: Vacuum Degassing Handles Openhearth Heats, May 25 p 104
Kaldo Process Makes U. S. Debut, by G. J. McManus, Apr 20 p 104
Oxygen Mills Face Smoke Crisis, Feb 2 p 57
Steel-from-Slag Changes Hands, Jan 26 p 52

J. P. Stevens Co.:

Plastics Have Designs on Cars, by A. E. Fleming, Feb 23 p 79

Stora Kaldo Process, see Steelmaking

Structural Steel

Do Open-Web Beams Compete? June 22 p 129
Structurals Get a New Shape, June 29 p 39
Super-Strong Shapes Hit Market, by G. J. McManus, May 18 p 112
System Automates All Handling of Big Structural Assemblies, by R. H. Eshelman, Jan 19 p 75

Swepco Tube Corp.:

Rock-Forging "Irons" Welds to Give Quality Tubing, by J. A. Seme, Feb 2 p 88

Szymczak, M. S.:

Will Borrowing Spur Business? Mar 30 p 79

T

The Tainton Co.:

Mechanical Plating: A Solution to Hydrogen Embrittlement? Mar 30 p 107

Tape, see Automation; Electronic Devices & Controls

Taxation

Bigger Tax on Overseas Profits? By R. W. Crosby, June 15 p 77
Comparing Depreciation Rates, Jan 19 p 59
Everyone Raps Tax Credit Plan, by R. W. Crosby, May 25 p 71
Cold Crises—Kill the Golden Goose? By G. F. Sullivan, Jan 19 p 52
How Business Reacts to Treasury Depreciation Survey, by E. C. Beaudet, Jan 12 p 31
How Serious Is Rift Between U. S. and Canada? By Tom Campbell, Jan 26 p 50
New LIFO Regulation Can Mean Tax Break, Mar 23 p 50
Orders Keyed to Tax Reform, by R. H. Eshelman, Feb 2 p 73
Pleas for Tool Plan Get Mixed Reaction, by R. H. Eshelman, June 8 p 67
Processors Fight Sales Tax Levy, by G. J. McManus, Jan 19 p 49
Tax Favors for Training Costs? May 11 p 89
Tax Reform Due for Rough Ride, by R. W. Crosby, Apr 27 p 69
Toolmen Offer Tax Change Plan, June 1 p 55
U. S. May Insure New Tool Loans, by R. W. Crosby, June 29 p 41
What's Ahead in Depreciation? By G. J. McManus, Feb 16 p 80

Technology Instrument Corp.:

Hand Mill Paces Terminal Job, Mar 16 p 113

Television

Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49
TV Camera Can Cut Tool Costs, by R. H. Eshelman, Mar 16 p 99

Testing & Inspection

Are Welding Codes Outdated? By R. Weck, Mar 16 p 109
Conveyor Lines Speed Assembly of Precision Instruments, Apr 6 p 108
D-H Process: Vacuum Degassing Handles Openhearth Heats, May 25 p 104
Film Processor Unravels Snag in Radiographic Testing, by George O'Brien, Jan 26 p 76
Forecast Scrap Losses in Machining, Feb 16 p 116
Hidden Causes of Bolt Failure: "Carb" and "Decarb", Mar 30 p 112
How to Make Simple Bend Tests, Jan 26 p 82
Immersion Tests Reduce Waste, Apr 6 p 112
Infrared Film Helps Design a Better Oxygen Lance, Mar 23 p 80
Man-Machine Teamwork Closer, by R. H. Eshelman, Mar 30 p 95
Precision Rules Space Tooling, by R. H. Eshelman, Feb 16 p 93
Research Attacks Seal Leakage, June 1 p 72
Rock-Forging "Irons" Welds to Give Quality Tubing, by J. A. Seme, Feb 2 p 88
Step-by-Step Controls Pay Off in Machining Hi-Temp Alloys, May 18 p 142
Vectors Define Casting Flaws, June 29 p 70

Thermoelectrics, see Electrical Equipment

Thiokol Chemical Corp.:

Tests Demonstrate Payoff of New Brazing Alloy, by R. C. Kopituk, Apr 13 p 90

Thompson-Ramo-Woodridge, Inc.:

Intellectronics Era Forecast, by R. R. Kay, June 15 p 91
Shrink Fitting: A Six-Second Job, by O. C. McNairn, June 8 p 98

Tin

Tin Price Is Starting to Firm, by F. J. Starin, May 11 p 80
Tin Shortage Is a Possibility, Feb 16 p 138

Tinius Olsen Testing Machine Co.:

Design Rotors for Balancing to Extend Machinery Life, by G. C. Lawrie, Jan 26 p 78

Tinplate

Aluminum, Thin Tinplate Battle for Frozen Citrus Market, by G. J. McManus, June 29 p 35
Metal Can Market Keeps Growing, by K. W. Bennett, Feb 9 p 81
Strip Mill Applies Simulator to Guide Tinplating Line, Mar 16 p 114

Titanium

Argon Flush: Key to Fabrication of Titanium-Clad Steel, by C. L. Kobrin, Apr 27 p 110
Cast Titanium by New Method, Mar 23 p 85
Welded Titanium Tubing Curbs Corrosive Attack of Acids, Jan 12 p 68

Titanium Metals Corp.:

Cast Titanium by New Method, Mar 23 p 85

Tool Industry

Detroit Tool, Die Shops Unite, by R. H. Eshelman, Jan 26 p 61

Tool Steel

New Tool Steel Uses Tungsten to Lubricate Forming Punch, June 15 p 106

Tools

Cold Impact Alters Grain Flow to Boost Socket Strength, June 22 p 130
Unit Couples Heat Treating Steps, Jan 12 p 70

Tools, Cutting

Are All Those Punches Needed? By H. R. Hugo, Jan 19 p 82
Automated Torches Cut Billets, by Richard Bechtle, Feb 16 p 114
Burrs Spur Finishing Progress, by R. H. Eshelman, Apr 13 p 77
Can Hot Machining Techniques Keep Pace With New Alloys? Mar 2 p 98
Chipbreaker Extends Tool Life, Feb 9 p 117
Fresh Approach in Machining Takes Aim on Hard Steels, by R. H. Eshelman, Apr 27 p 101
GE Makes Carat-Size Diamonds, Jan 19 p 81
How to Prolong Press Tool Life, Jan 26 p 81
New Heat-Treatable Carbides Offer Job Versatility, by J. L. Ellis, Mar 2 p 92
New Methods Pace Tool Design, by Horace Frommelt, Feb 9 p 118
New Orders Stumble in January, by R. H. Eshelman, Mar 9 p 75
Salt Bath Promises Low Alloys New Horizons in Design, June 1 p 68
Step-by-Step Controls Pay Off in Machining Hi-Temp Alloys, May 18 p 142

Toys, see Metalworking Industry

Trade Associations

Detroit Tool, Die Shops Unite, by R. H. Eshelman, Jan 26 p 61
Revised Directory of Trade Associations, Jan 5 p 250

Training Games, see Data Processing

Training Programs

Builders Forge Own Recovery, by R. H. Eshelman, May 25 p 91
Employee Training Job Grows, May 18 p 108
Future Shortage of Engineers Starts on Campuses Now, by J. D. Baxter, June 22 p 85
How to Retain Skilled Workers, by C. V. D. Rousseau, Mar 23 p 75
Line Managers Are the Key Men in Developing New Executives, by Moorhead Wright, Mar 2 p 71
More and Better Trade Schools Needed to Boost Skills, Jobs, by P. J. Cathey, Apr 6 p 65
More Efficient Control Needed, May 18 p 119
Tax Favors for Training Costs? May 11 p 89

Transfer Lines, see Material Handling; Plant Layout

Transportation

Automakers Preview the Future, by A. E. Fleming, Jan 19 p 50
Bay Area Plans Rapid Transit, by R. R. Kay, Mar 16 p 96
Industry Reels under Buffeting by Winter's Icy Blasts, Feb 9 p 77
Japanese Ships Invade Seaway, by K. W. Bennett, June 22 p 94

Transportation Equipment

Metalworking's Capital Spending: Is There an Upturn in the Works? By E. C. Beaudet, Mar 30 p 81
Quench Side Rails for Hardness, Apr 27 p 109
Seattle Set for World's Fair, by R. R. Kay, May 4 p 73
Step Up New Outlays for Plants, Equipment, by E. C. Beaudet, June 29 p 49

Turbines

Engineers Advance Gas Turbine, by A. E. Fleming, Mar 9 p 71

Turkey

U. S. Loan Builds Turkey Steel Mill, Jan 12 p 39

U

Ultrasonics

Immersion Tests Reduce Waste, Apr 6 p 112
Welding Meets Challenge of Space Age Metals, by R. R. Irving, Apr 6 p 99

Union Carbide Corp.:

Cleaner Chrome Boon to Melters, June 15 p 116
How to Improve Heat Efficiency in Your Insulation System, Apr 20 p 136

United Aircraft Corp.:

Computers Talk Shop Language, June 22 p 127

The U. S. Bedding Co.:

Machine Steps Up Paint Mileage by E. A. Zahn, Mar 16 p 116

U. S. Burke Machine Tool Co.:

Hand Mill Paces Terminal Job, Mar 16 p 113

U. S. Industries, Inc.:

How Quick Reaction Capability Speeds Product Development, by K. W. Bennett, June 1 p 47

U.S.S.R.:

Builder Backs Trade With Reds, by R. H. Eshelman, Apr 6 p 91
Future Shortage of Engineers Starts on Campuses Now, by J. D. Baxter, June 22 p 85
Russians Alter Blast Furnaces to Improve Oxygen Injection, Apr 13 p 98
What's the State of Welding Behind the Iron Curtain? By G. E. Clausen, Feb 2 p 81
Will Reds Beat U. S. With 2000 MPH Plane? June 15 p 91

U. S. Steel Corp.:

Is Steel Pickup on Target? Apr 13 p 61
Steel Research Keeps Customers, by G. J. McManus, Jan 26 p 48
Structurals Get a New Shape, June 29 p 39
Super-Strong Shapes Hit Market, by G. J. McManus, May 18 p 112
U. S. Steel Urges New Design Ideas, May 4 p 59
proves Machinability, Mar 16 p
Columbium Curbs Wrinkling in Forming Stainless Strip, by C. T. Evans, Jr., Feb 23 p 96
New Entry for Autos: Buffed Stainless, June 22 p 89

University of Michigan Survey Research Center:

How Consumers View Recession, Jan 19 p 59

Uranium

Alaska's Mines Are Weakening, by R. R. Kay, Mar 23 p 64
Can Uranium Improve Steel? By S. I. Gertsman, Apr 6 p 110

V

Vacuum Melting, see Furnaces, Vacuum

Vacuum Metallurgy

Argon Teeming: Extra Refinement to Vacuum Degassing of Steel, May 18 p 140
D-H Process: Vacuum Degassing Handles Openhearth Heats, May 25 p 104
New Powder-Metallurgy Process Makes Parts in Vacuum, by R. H. Eshelman, May 25 p 101

Vanadium

Ductile Vanadium Techniques That Make Fabrication Easier, by T. W. Merrill, Feb 9 p 110

Vanadium Corp. of America:

Ductile Vanadium Techniques That Make Fabication Easier, by T. W. Merrill, Feb 9 p 110

Vital Issues, see Management

Volkswagen

VW's Nordhoff on World Trade, by E. C. Beaudet, May 25 p 76

W

WaiMet Alloys Co.:

Tailored Alloys Help to Solve Investment-Casting Problems, by R. H. Eshelman, May 11 p 114

Wallingford Steel Co.:

Universal-Cyclops Steel Corp.:

Seam Welder Joins Strip Quickly, June 1 p 78

Warehousing

Builders Used Most Steel in '60, One-Fourth of All Shipments, Apr 27 p 67
Service Centers Push Marketing, by G. F. Sullivan, May 25 p 79
Will Warehouse Pickup Last? By K. W. Bennett, Jan 26 p 46

Warren Tool Works:

Unit Couples Heat Treating Steps, Jan 12 p 70

Wastes, Disposal & Utilization

Dust Conditioner Aids Handling, Mar 23 p 88
Heat-Treat and Plating Wastes Go Up in a Puff of Smoke, June 8 p 94
Lift Truck Speeds Reclamation of Scrap-Aluminum Aircraft, Mar 23 p 86

Water

Water Desalting: Push Is On, by K. W. Bennett, May 11 p 82

See also Pollution, Water

Jervis B. Webb Co.:

Efficient Monorail System Absorbs Finishing Line, by J. K. Harlow, Jan 12 p 62

Weighing

Scale Makers Report Gains, May 18 p 184

Welded Construction

Computer Solves Layout Problem, Mar 30 p 110

Welding & Welding Machines

Are Welding Codes Outdated? By R. Weck, Mar 16 p 109
Argon Flush: Key to Fabrication of Titanium-Clad Steel, by C. L. Kobrin, Apr 27 p 110
Axles Welded in a Vapor Shield, by R. H. Eshelman, Jan 19 p 78
Computer Solves Layout Problem, Mar 30 p 110
Engineers Come to Grips With Weld Distortion, Feb 23 p 104
How Explosives Weld Metals, May 4 p 83
Price Edge Favors U. S. Welders, by T. M. Rohan, Apr 27 p 71
Reactor Gets Repair-Free Welds, Feb 16 p 106
Roll-Weld Method Bonds Panels, Apr 27 p 114
Rotating Unit Welds Pipeline, Mar 9 p 94
Seam Welder Joins Strip Quickly, June 1 p 78
Soldering Lines Go Automatic, June 1 p 65
Structurals Get a New Shape, June 29 p 39
Switch to Semiautomatic Welding Speeds Railcar Assembly Work, by M. H. Waggener, May 25 p 113
Two Passes Weld Heavy Plate, Feb 9 p 120
Weld Experts Gather, Apr 6 p 138
Welded Titanium Tubing Curbs Corrosive Attack of Acids, Jan 12 p 68
Welded Tubes Wind Foil Evenly, June 22 p 132
Welding Meets Challenge of Space Age Metals, by R. R. Irving, Apr 6 p 99
What's the State of Welding Behind the Iron Curtain? By G. E. Clausen, Feb 2 p 81
Will Welding Profits Improve? Jan 5 p 200

Western Electric Co., Inc.:

Efficient Monorail System Absorbs Finishing Line, by J. K. Harlow, Jan 12 p 62

Westinghouse Electric Corp.:

Fast Computer Gives Big View, by G. J. McManus, Feb 9 p 82
Progressive Automation: A Way to Fight Foreign Competition, by G. W. Jernstedt, Apr 20 p 129
New Tool Concepts Are Needed, by R. H. Eshelman, May 18 p 125
Westinghouse Acts, Apr 13 p 63

Whirlpool Corp.:

Integrated Tools Shape Shafts, by H. E. Benn, Feb 2 p 92

Whitehead & Kales Co.:

Switch to Semiautomatic Welding Speeds Railcar Assembly Work, by M. H. Waggener, May 25 p 113

J. H. Williams & Co.

Cold Impact Alters Grain Flow to Boost Socket Strength, June 22 p 130

Wire

Shaver Skins Rod Quickly, June 15 p 113

X

X-Ray

Film Processor Unravels Snag in Radiographic Testing, by George O'Brien, Jan 26 p 76

Y

The Yale & Towne Mfg. Co.:

Seven Ways to Get Efficiency from Materials Handling, June 29 p 67

Z

Zinc

Galvanized Sheet Market Grows, by G. J. McManus, June 1 p 40
Lead and Zinc Outlook Brightens, May 11 p 83
Zinc Discounting: Has It Ended? Jan 19 p 118
Zinc Stages Auto Comeback, by A. E. Fleming, Jan 5 p 105
Zinc Thrown Into Price Confusion, Jan 12 p 94

Zirconium

New Powder-Metallurgy Process Makes Parts in Vacuum, by R. H. Eshelman, May 25 p 101

AUTHOR INDEX

JANUARY - JUNE 1961

B

Balman, C. A.:

Dynamic Honing Rids Trouble in Hydraulic Fluid Lines, May 25 p 108

Barriage, J. B.:

Guard Against Fatigue Failures, Feb 16 p 111

Baxter, J. D.:

Defense Buying Changes Asked, Jan 19 p 48
Future Shortage of Engineers Starts on Campuses Now, June 22 p 85
Short-Term Outlook Is Bright, May 25 p 80
"Use With Caution" Is Advice in Using Inventory Figures, Jan 12 p 36

Beaudet, E. C.:

FTC Set to Speed Enforcement, May 4 p 67
How Business Reacts to Treasury Depreciation Survey, Jan 12 p 31
Industrial Expansion, Exports Stretch Out Tool Backlog, June 8 p 65
Justice Department Policies on Merger Laws, Apr 13 p 68
Labor Shortage: No Letup in Sight, June 1 p 38
Metalworking's Capital Spending: Is There an Upturn in the Works? Mar 30 p 81
Steel Expansion Rate Slows Down, June 15 p 80
Step Up New Outlays for Plants, Equipment, June 29 p 49
Trade With U. S., World Markets, June 22 p 92
U. S. Names Grow at Hanover Fair, May 11 p 78
VW's Nordhoff on World Trade, May 25 p 76
(The) Vital Issues Series, see Management
West Germany: Economy Booms, But Not Without Problems, May 18 p 105

Bechtle, Richard:

Automated Torches Cut Billets, Feb 16 p 114

Benn, H. E.:

Integrated Tools Shape Shafts, Feb 2 p 92

Bennett, K. W.:

Appliances Try for a Recovery, Feb 16 p 76
Better Package; Bigger Profit, Apr 20 p 106
Big Squeeze Is Put on Metals Research, June 29 p 38
Corporate R & D: Facelifting Due, Mar 9 p 59
Farm Equipment Sales May Rise, Jan 5 p 96
Farm Tool Outlook Strengthens, June 15 p 78
For Small Plants: Tips on Bids, Apr 13 p 62
How Quick Reaction Capability Speeds Product Development, June 1 p 47
Instrument Sales on the Way Up, Jan 26 p 45
Japanese Ships Invade Seaway, June 22 p 94
Maintenance Costs Can Be Cut, Feb 2 p 56
Management Hunt Under Way, Feb 23 p 65
Metal Can Market Keeps Growing, Feb 9 p 81
R & D Outlays Hit New Peak, Jan 5 p 94
Small Business Makes Big Gains; Forges Even Brighter Future, June 8 p 59
Stampings Get Boost Along Recovery Road, May 18 p 111
Steel Founders Remain Cautious, But Business Is on the Mend, Mar 23 p 45
Thermoelectric Comes of Age, Apr 6 p 70
Toymakers Up Tooling Outlays, Mar 2 p 64
Water Desalting: Push Is On, May 11 p 82
What's Ahead for U. S. Exports? Mar 16 p 81
Will Warehouse Pickup Last? Jan 26 p 46

Bennett, K. W. & H. R. Neal:

Arbitration Costs Are Climbing, But Are They Excessive? Feb 2 p 53

Brandt, W. E.:

Vibratory Finishing the Key to Smoother Surfaces, May 18 p 135

Bulow, C L.:

Can Copper Alloys Hold the Line at Ultralow Temperatures? Mar 9 p 92

C

Campbell, Tom:

AISI: Good Times Are Ahead, June 1 p 35
Editorials, see Subject Index
Highlights of AISI Meeting: Optimism and Caution, June 1 p 36
How Fast Is Red China Moving? Apr 27 p 74
How Serious Is Rift Between U. S. and Canada? Jan 26 p 50
How to Do Business in Japan, Mar 23 p 59
Iron Ore Work Booms in Canada, Mar 9 p 62
Japan Fights Raw Materials Gap, Apr 6 p 72
Japan Must Export to Survive, Apr 20 p 108
Japan Sets Steel Goals for 1970, Apr 13 p 87
Labor and Unions in Japan, Mar 30 p 74
Recession That Wasn't There Should Fade in Early Fall, Jan 5 p 89
Strong U. S. Stand Urged in Laos, Mar 30 p 72
What's Next for Steel Prices? June 22 p 88
Will Report Bring Changes? Jan 19 p 46

Cathey, P. J.:

Making Plant Location Easier, Feb 16 p 78
More and Better Trade Schools Needed to Boost Skills, Jobs, Apr 6 p 65

Claussen, G. E.

What's the State of Welding Behind the Iron Curtain? Feb 2 p 81

Crosby, R. W.:

Are Price Controls Coming? Feb 9 p 84
Bigger Tax on Overseas Profits? June 15 p 77
Change Trade Policy—But How? Feb 2 p 59
Depressed Area Aid Set for Fast Action, Jan 12 p 35
Everyone Raps Tax Credit Plan, May 25 p 71
Export Credit Overhaul Likely, Mar 9 p 57
Government Urged to Keep Out of Future Steel Strikes, Jan 19 p 45
Joint Antitrust Move Underway, Mar 30 p 73
Kennedy Faces a Hornet's Nest, Jan 5 p 91
Military Procurement Practices: Target of Three-Pronged Attack, Feb 16 p 73
Patent Hearings Flash Warnings; Industry's "Rights" at Stake, June 15 p 73
President Urges Spending Boost, June 1 p 37
Tax Reform Due for Rough Ride, Apr 27 p 69
U. S. Asks: Is Steel Price Rise Needed? June 8 p 63
U. S. May Insure New Tool Loans, June 29 p 41
Washington, p 11 all issues

E

Ellis, J. L.:

New Heat-Treatable Carbides Offer Job Versatility, Mar 2 p 92

Erxleben, R. F.:

End White-Layer Problems on Nitrided Parts, May 25 p 106

Eshelman, R. H.:

Automatic Assembly Isn't Dead, Mar 2 p 79
Axles Welded in a Vapor Shield, Jan 19 p 78
Builder Backs Trade With Reds, Apr 6 p 91
Builders Forge Own Recovery, May 25 p 91
Burrs Spur Finishing Progress, Apr 13 p 77
Cold-Joint Problems Disappear on Automated Soldering Line, Jan 26 p 69
Computers: A Production Cure? June 15 p 93
Conveyors Link Forging Line, May 4 p 90
Democracy Needs Top Tooling, June 22 p 105
Detroit Tool, Die Shops Unite, Jan 26 p 61
England Is Going Automatic, Jan 19 p 65
Fresh Approach in Machining Takes Aim on Hard Steels, Apr 27 p 101
Hand Assembly: Does It Pay? Apr 27 p 93
Heat Treating Goes Automatic, June 8 p 79
Industry Outlook Brightens, Feb 9 p 95
Is Tool Production Faltering? Apr 20 p 119
Labor Costs Force Automation, May 11 p 95
Man-Machine Teamwork Closer, Mar 30 p 95
Materials Engineering Raises Machine Tool Performance, Mar 9 p 96
Metcut Provides Machining Data, Jan 12 p 49
New Orders Stumble in January, Mar 9 p 75
New Powder-Metallurgy Process Makes Parts in Vacuum, May 25 p 101
New Tool Concepts Are Needed, May 18 p 125
One-Machine Shop Speeds Work, Feb 23 p 83
Orders Keyed to Tax Reform, Feb 2 p 73
Pleas for Tool Plan Get Mixed Reaction, June 8 p 67
Precision Rules Space Tooling, Feb 16 p 93
Production Setups Extend Scope of Diecast Aluminum Engines, Mar 16 p 120
System Automates All Handling of Big Structural Assemblies, Jan 19 p 75
Tailored Alloys Help to Solve Investment-Casting Problems, May 11 p 114
Tool Bank Idea Gets New Life, Mar 23 p 67
Tool Orders Are Picking Up, May 4 p 75
Tool Order Upturn Fails to Show, June 29 p 61
Tool Plants Run at Half Speed, Jan 5 p 109
Toolmen Offer Tax Change Plan, June 1 p 55
TV Camera Can Cut Tool Costs, Mar 16 p 99

Evans, Jr., C. T.:

Columbium Curbs Wrinkling in Forming Stainless Strip, Feb 23 p 96

F

Fleming, A. E.:

Aluminum Axle Housing Next? June 1 p 51
Aluminum Engines at Crossroads, June 29 p 57
Aluminum for Car Wheels? May 4 p 71
Automakers Preview the Future, Jan 19 p 50
Automakers Ready for 1962, June 8 p 75
Automakers Ready New Engines, June 22 p 101
Auto Strike Hinges on Sales, Feb 9 p 80
Body Battle Flares in Detroit, Mar 23 p 47
Bright Annealed Demand Rises, Mar 2 p 75
Can Automakers Hold Sales Gains of '60? Jan 5 p 97
Chrysler Plugs Aluminum Engine, Feb 9 p 91
Compacts Follow Corvair Lead, Mar 30 p 91
Congress Probes Auto Safety, Apr 6 p 87
Copper Fights Cost Problems, Mar 23 p 63
Engineers Advance Gas Turbine, Mar 9 p 71
Ford Buys Two Autolite Plants, Apr 20 p 115
Ford Develops a 'Little' V-8, Feb 16 p 89
Ford Develops Small V-8 Engine, June 15 p 89
Ford Readies More Compacts, Jan 12 p 45
Ford Says Hold Labor Cost Line, Mar 16 p 95
Foreign Car Price Cuts Coming, Feb 2 p 69
GM Defends U. S. Auto Industry, Jan 19 p 61
Gloves Off in Auto Bumper War, May 18 p 121
New Cars Back up on Dealers; Automakers Fight '58 Trend, Feb 23 p 63
New Uses for Porcelain Enamel? Apr 13 p 73
Plastics Have Designs on Cars, Feb 23 p 79
'62 Cars Get Beauty Treatment, by A. E. Fleming, May 25 p 87
Sports Car Trend Shapes Up, May 11 p 91
A Trend in Small Engines? Jan 26 p 57
UAW Draws Bargaining Plans, May 4 p 58
Weather Warms Up Car Market, May 25 p 74
What's Ahead for Chrysler? Apr 27 p 89
Zinc Stages Auto Comeback, Jan 5 p 105

Frisk, E. E.:

Sulphur Aids Copper Machining, Jan 26 p 74

Frommelt, Horace:

New Methods Place Tool Design, Feb 9 p 118

G

Gertsman, S. I.:

Can Uranium Improve Steel? Apr 6 p 110

H

Harlow, J. K.:

Efficient Monorail System Absorbs Finishing Line, Jan 12 p 62

Hodges, F. D.:

Vibratory Finishing Speeds Work on Metals and Plastics, Jan 26 p 72

Hugo, H. R.:

Are All Those Punches Needed? Jan 19 p 82

I

Irving, R. R.:

Centrifugal Force Adds Luster to Barrel Tumbled Parts, Feb 2 p 84
Welding Meets Challenge of Space Age Metals, Apr 6 p 99

J

Jernstedt, G. W.:

Progressive Automation: A Way to Fight Foreign Competition, Apr 20 p 129

K

Kay, R. R.:

Aerospace Hunts New Metals, Apr 27 p 91
Aerospace Spotlighted at Show, Mar 30 p 93
Alaska's Mines Are Weakening, Mar 23 p 64
Bay Area Plans Rapid Transit, Mar 16 p 96
Building Paces Steel Upswing, May 11 p 93
Businessmen Forecast Pickup, Apr 20 p 117
California Construction Rises, Mar 2 p 77
California Needs More Customers, June 8 p 77
Coast Steelmakers Optimistic, Mar 9 p 73
Computers: Supersonic Market, May 25 p 88
Defense Switch Feelings Mixed, Feb 23 p 81
Electronics Moves to the Top, Apr 6 p 89
Farwest Retains 1960 Optimism, Jan 5 p 107
Farwest Steel Upturn Predicted, Jan 12 p 47
How Aircraft Makers Diversify, Jan 19 p 63
How Will Kaiser Plan Fare? Jan 26 p 59
Industrial Boom Hits Arizona, Apr 13 p 75
Intelectronics Era Forecast, June 15 p 91
L. A. Smog: It Is Still a Problem, June 22 p 103
Metalworking Market Widens, June 1 p 53
The Moon: How Valuable to Man? June 29 p 59
More Power at Indianapolis? May 18 p 123
N. Y. Recruits West Industries, Feb 2 p 71
Scientist Sees Boost in R & D, Feb 9 p 93
Seattle Set for World's Fair, May 4 p 73
West Building Boom Continues, Feb 16 p 91

Kobrin, C. L.:

Argon Flush: Key to Fabrication of Titanium-Clad Steel, Apr 27 p 110
Developments Spur Interest in Investment Casting, Feb 23 p 100
Cas Injection for Blast Furnace? Feb 9 p 107
Is Red Chinese Metallurgy Taking a "Leap Forward" Mar 23 p 82
Materials for the Future, June 22 p 115

Kopituk, R. C.:

Tests Demonstrate Payoff of New Brazing Alloy, Apr 13 p 90

L

Lavigne, W. J.:

Reversing of Heat-Treat Cycle Trims Machining Costs, Feb 9 p 114

Lawrie, G. C.:

Design Rotors for Balancing to Extend Machinery Life, Jan 26 p 78

M

McManus, G. J.:

Aluminum, Thin Tinplate Battle for Frozen Citrus Market, June 29 p 35
Are Computers Taking Over Management's Functions? Mar 30 p 69
Buyer Poll Shows Bright Signs, Mar 9 p 58
Commodity Pricing Hits Steel, May 11 p 75
Continuous Casting Faces Test, May 18 p 110
Fast Computer Gives Big View, Feb 9 p 82
Galvanized Sheet Market Grows, June 1 p 40
GE Rejects Low Pricing Limit, June 22 p 90
Industry's Foreign Investment: It Has Its Plus Value, Feb 2 p 60
Kaldo Process Makes U. S. Debut, Apr 20 p 104
Making Labor Contracts Work, Mar 23 p 49
New Heat-Treat Lines for Plate Bank on Growing Alloy Markets, Mar 9 p 85
Nuclear Men View Safety Problems, June 15 p 79
Processors Fight Sales Tax Levy, Jan 19 p 49
Steel: Better Profits in '61? Apr 6 p 76
Steel Puts Reins on Spending: Sales, Cash Flow Slide, Jan 5 p 92
Steel Research Keeps Customers, Jan 26 p 48
Super-Strong Shapes Hit Market, May 18 p 112
What's Ahead in Depreciation? Feb 16 p 80
What Stainless Price Cuts Mean, June 8 p 62

McNairn, O. C.:

Shrink Fitting: A Six-Second Job, June 8 p 98

Merrill, T. W.:

Ductile Vanadium Techniques That Make Fabrication Easier, Feb 9 p 110

Moxon, A. L. & S. B. Wyman:

Improved Aluminum Offers Lifetime Brightness, Mar 23 p 78

N

Neal, H. R.:

House Automation Hearings: Short Workweek Sounding Board, Mar 16 p 79

Neal, H. R. & K. W. Bennett:

Arbitration Costs Are Climbing, But Are They Excessive? Feb 2 p 53

O

O'Brien, George:

Film Processor Unravels Snag in Radiographic Testing, Jan 26 p 76

R

Raddant, R. D.:

Planning Shows in Steel Earnings, Feb 9 p 85
Should the Public Take Part in Labor Disputes? Interview with Dr. George W. Taylor, Mar 16 p 90

Redstreake, W. N.:

Force-Fit Problems Fade Away With New Unground Bearings, Mar 9 p 90
How to Plan Production Runs With Precision in Mind, May 11 p 105
New Oils Lick Rust Problem, June 8 p 92

Reno, C. L.:

Are Communications a Headache in Your Management Program? Jan 19 p 86

Rohan, T. M.:

Appliance Makers Sight Upturn, June 15 p 76
Automakers Demand Finer Finish, Apr 6 p 69
Automated Press Widens Forging, Apr 13 p 64
Buyer Push for Fast Delivery Blunts Steel Import Sales, Mar 2 p 59
Demand Lags for Lakes Iron Ore, May 11 p 77
New Ideas Cut Buying Costs, Feb 23 p 66
Oxygen Spurs Move to Smoke Control, Apr 20 p 107
Price Edge Favors U. S. Welders, Apr 27 p 71
Steel Strikes Back at Imports, Feb 23 p 68
U. S. Ore Falls Before Imports, Jan 12 p 38
USWA Launches All-Out Drive to Organize S. Ohio Workers, Ma 4 p 55

Rousseau, C. V. D.:

How to Retain Skilled Workers, Mar 23 p 75

S

Seme, J. A.:

Rock-Forging "Irons" Welds to Give Quality Tubing, Feb 2 p 88

Smith, W. J.:

Plant Repairs Get Fast Action With Data-Processing Method, May 4 p 86

Starin, F. J.:

Ahead for Lead: Era of Growth, Mar 2 p 62
Can Nonferrous Markets Hold up Under New Price Pressures? Jan 26 p 43
Foreign Automakers Push Sales, But Predict a U. S. Shakeout, Apr 13 p 59
New Markets Help Aluminum, Jan 5 p 95
Nuclear Market to Explode If, Mar 9 p 60
Price Policy Lures Mg Users, Feb 2 p 58
Tin Price Is Starting to Firm, May 11 p 80

Stevens, G. J.:

Tricks of the Trade Pay Off in Machining Stainless, Apr 20 p 140

Strasser, Federico:

How Creative Stamping Design Can Effect Stock Savings, June 1 p 76
How to Repair Broken Gears, Feb 2 p 86

Sullivan, G. F.:

Gold Crisis Kill the Golden Goose? Jan 19 p 52
Price Fixing (Round II), Apr 6 p 67
Service Centers Push Marketing, May 25 p 79
We're Being Financed Out of World Markets, Mar 2 p 63

Surer, B. F.:

Annual Embezzlements Soar, Apr 27 p 72
Cost, Dollar Value Challenge New Home Market, Mar 9 p 55
Electric Truck Makes Headway, June 8 p 66
Tool Bank Plan Is Under Attack, May 25 p 73

T

Taylor, George W.:

Should the Public Take Part in Labor Disputes? Mar 16 p 90

Treco, R. M.:

How Space-Age Energy Sources Spark Rise of New Materials, Mar 2 p 87

Tucker, S. A.:

How to Boost the Efficiency of Supervisory Personnel, Feb 16 p 103

W

Waggener, M. H.:

Switch to Semiautomatic Welding Speeds Railcar Assembly Work, May 25 p 113

Weck, R.:

Are Welding Codes Outdated? Mar 16 p 109

Wright, Moorhead:

Line Managers Are the Key Men in Developing New Executives, Mar 2 p 71

Wyman, S. B. & L. A. Moxon:

Improved Aluminum Offers Lifetime Brightness, Mar 23 p 78

Z

Zahn, E. A.:

Machine Steps Up Paint Mileage, Mar 16 p 116

Zarnke, Elmer:

Does a Transfer Line Pay Off? June 8 p 96

The IRON AGE A CHILTON PUBLICATION Chestnut and 56th Sts., Philadelphia 39, Pa.

Printed in U.S.A.